ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

ENTERED IN THE SPRINGFIELD POSTOFFICE AS SECOND-CLASS MATTER.

VOL. XV SPRINGFIELD, ILL., APRIL, 1909 No. 4

ORIGINAL ARTICLES

Symposium on Syphilis

CUTANEOUS MANIFESTATIONS OF SYPHILIS.*

JAMES NEVINS HYDE, M.D.
CHICAGO.

Mr. President and Gentlemen of the Chicago Medical Society:

In thanking you for the invitation extended to me to take part in the symposium on the interesting subject selected for discussion this evening, I feel sure that you will agree with me in a foreword. In the vast and accumulating literature on the subject of syphilis there is no one of its recognized phenomena which has not been amply described. The pencils of masters, men of enormous experience and keen judgment, have delineated in type and portrait every phase of this malady of maladies. In the few minutes at my disposal it would be impossible to cover the wide field of its cutaneous manifestations. I have, therefore, in the hope that it might prove interesting to the general practitioner, concluded to present to you four pictures representing groups of symptoms sometimes following the initial stage of the disease, groups which as such are not generally recognized and accepted.

The first picture to which I call your attention is that of the man whose evidences of systemic infection are so slight as to escape observation save under the closest scrutiny. I had almost set down the words, "where the evidences of systemic infection are wholly wanting," but this would be somewhat inexact. There are individuals in a hypochondriacal condition of mind who are fearful of syphilis and anxious to believe that its evidences may escape even the best trained observation, that the disease may lack expression when actually in possession of the citadel of the human body. In the ears of such a class, the words which follow might awaken apprehension and prove a source of unspeakable wretchedness. But men of science approach the truth fearlessly. Without any

* Read before the Chicago Medical Society Jan. 20, 1909.

question there is a class of subjects in whom the first evidences of systemic disease are so evanescent, so inconspicuous, so trivial, that they defy detection save after the most exhaustive and scrupulous search. I believe these patients fall into two groups. The first group is the most happily constituted. Granting that the treponema pallidum (sometimes termed the spirochæte) is the germ containing within itself or the toxins it produces all the power and potency of syphilis, it is certainly implanted at times in soils so unfavorable for its propagation that there it languishes and perishes without working obvious harm. There is nothing surprising in this fact. There are heifers so inapt for the reception of the vaccine virus that they can not be made vaccinifers. There are men and women who are vaccinated only with difficulty and after repeated failures. There are human subjects unvaccinated previously who have as the sole evidences of a variola which has been transmitted to them a single pock, or whose disease is limited to a transient malaise and mild pyrexia. All have seen such mitigated cases of scarlatina, cholera, and even yellow fever, that one is surprised at the insignificant results. In syphilitic patients there are those who may only exhibit a few papules on the forehead or a few scaling patches on the palms, and whose evidences of disease, after half a century of observation, are absolutely limited to these few manifestations. These are, indeed, the rare exceptions to the rule. They are so few and so readily escape observation that their existence as a class may well be doubted by the scientific skeptic.

The second group in this picture is by far the more sad and perilous. Herein are to be classed the men and women whose first systemic manifestations are trivial, insignificant, and apparently without serious portent, where the virus of the disease has stealthily invaded the organism and has concealed its approaches in a fashion that among all diseases syphilis alone affects. These patients are often pallid, anemic, asthenic. Their blood count shows a loss of hemoglobin and decrease in the number of erythrocytes. Even before the era of the Wassermann test, they might be classed as suspects. Externally there may develop, as in the other class cited, a few papules or one or two mucous patches. The physician may then be lulled into a false sense of security, especially when, as may happen, the few external evidences of the intoxication rapidly vanish under an appropriate therapy. Months, even years, may elapse and the cloud over the patient seem to be dissipated. Eventually the blow falls, seemingly the more violent, the more destructive, and the more deadly for the long-deferred explosion. A gumma of the brain, an obliterating endarteritis, a deep subcutaneous lesion developing with a relentlessness which the French call *terébrant,* melts down tendon, bone and muscle in its path with a fury that suggests to the mind the destruction wrought by a tornado. I venture to cite one illustrative case, that of a gentleman delicate of frame and somewhat anemic, who applied to my friend, the late Dr. Robert W. Taylor, of New York, and who gave a history of an insignificant initial sclerosis, the

nature of which was in doubt. He was repeatedly examined afterward by Taylor and myself for symptoms of systemic invasion. During the year following, after repeated and careful examinations, we could never recognize anything more suspicious than a slight but fairly typical alopecia of the brows and one enlarged postoccipital gland. For three years this patient lived for the most part in Europe pursuing the treatment advised, only at intervals and at his own convenience. He was finally brought back home, the victim of unmistakable tabes.

The second picture representing cases to which I desire to call attention may be described, in terms of one of those sketched above, as "happy." It includes men and women who have syphilis, as some children have measles and scarlet fever, in one superb, brilliant, generalized exanthem, and then no more. This is the ideal patient; his or her syphilis is the ideal of the successful practitioner. The conception that syphilis may be in cases a disorder displayed in one general exanthem is quite different from that taught by the aid of the worn manikin of the schools. We must have our manikin; from it we have to learn the rudiments. It has taught the most of us what we first knew of disease. But, all said and done, it is a clumsy attempt to represent what we discover at the bedside or in the clinic.

According to the old conception of the course of syphilis, the conception first formulated in the now antiquated scheme devised by the immortal Ricord, there is a primary, a secondary, and a tertiary stage. The suggestion is that of a railway train which starts from a given point and in time reaches the several stations set down on the map. I was much gratified when Professor Adami, of Montreal, first endorsed my representation of the infection-process from the pathologic point of view. A fitter comparison of the post-infection carrier would liken it to what happens when a pebble is thrown clear through a pane of glass. From the wound thus inflicted the glass may be riven in any of several directions radiating from the point of impact of the pebble, or in many lines, some running lengthwise of the entire pane, some producing a shattering effect.

The patient with one and only one exanthem in constitutional syphilis, briefly the ideal patient, is young, vigorous, without bad habits, and, therefore, preferably the innocent victim of extragenital infection. On this soil the toxins of the disease work with untramelled facility. The first and only macular exanthem is universal, copious, brilliant, disfiguring. The usual concurrent symptoms of the disease at this period (adenopathy, involvement of the mucous surfaces, etc.) are present. Then intervenes an appropriate, skilfully conducted, properly prolonged, energetic treatment. There are no further symptoms. The caviller will protest; "wait for ten years and see!" Some of these patients have been watched for twenty years and more, without further consequences. Without fear of contradiction, it may be set down that syphilis is in some cases a disorder of one exanthem, one vigorous expression, or, to use the language of French authors, one grand explosion.

The third picture includes the subjects of somewhat unusual occurrences in systemic syphilis. It is that which most conspicuously disarranges the rules set forth in the manikin of the schools. It represents a group of accidents which conclusively disprove the railroad time tables, in which after a classically developed syphilitic primary infection there must be a secondary and later a tertiary stage. Often, indeed, in this singularly elusive disease, that which, according to the rule, should be secondary becomes tertiary or even quartenary, and the latter secondary. It is a striking fact that the French themselves, half conscious of the defects of their scheme, have been obliged to coin the terms "tardy," "late," "precocious" and "galloping" in order to make the time-table fit the facts. In truth, whenever syphilis is really formidable in its career, it wastes nothing in the way of time. Of all grave forms of syphilis, it may be truthfully said that the last may be first and the first, in rare instances, may even be either last or extremely late. The liver has been found, postmortem, studded with gummata three months after the date of infection. I have seen the hard palate perforated when the stigmata of the earliest exanthem had not yet faded. Who has not seen destructive gummata of the skin conclude the cycle of bursting, ulceration, and cicatrization within the first half-year after the onset of the disease! These are not wonder histories—they are the facts which pathologists have to face and to explain.

A highly valued contribution to this interesting subject, of the character one would expect from the enormous experience of the author, is Fournier's late work, entitled "Syphilis Sécondaire Tardive," published in 1906—a title which in itself demonstrates how fully the author and his countrymen are dominated by the inflexible secondary-tertiary schedule. The pages of this work play such havoc with the established precepts of syphilology that they suggest the confusion wrought by a bull in a china shop! Here are seriously depicted superficial palmar lesions in syphilis at the twenty-ninth year of its existence: papulo-squamous scrotal lesions ten years after infection; superb lenticular and circinate maculations set down as "tertiary erythema!" In the words of the Master, "It is possible that the symptoms of a secondary disorder may develop in the course of the tertiary period." I have been able to verify many of these facts. Often, indeed, my late colleague, Dr. Frank Hugh Montgomery, has joined me in studying and questioning the meaning of these odd phenomena; and, while I have been willing to believe that in some of these cases the symptoms were more probably evidences of such a toxic erythema as Osler has ably discussed before the profession, the facts, however explained, have to be recognized.

In truth, gentlemen of the society, it is only the vulgar mind that looks upon a dermatosis in syphilis as the disease itself. When we know more than at present, we shall recognize the fact that the cutaneous expression of a disease is only a part, often a small part, of the whole. The large number of dermatoses are simply surface indications of a deeply effective toxin--and the syphilitic lesions of the skin are of that

order—whether directly or indirectly produced by the invasion of the treponema which, after introduction at the invasion-atrium, may set up radiations thence in one or many directions. The virus at times may be quiescent; at others, even after long periods of apparent repose; it may paint again upon the surface of the body the evidences of renewed activity.

The fourth and last picture to which I wish to call attention is one which depicts more diagnostic errors than all others. It is a picture which portrays the unusual, the eccentric, the unexpected, in any stage or period of the disease, the picture that seems to assert the impossibility of syphilitic infection, the picture that suggests to the observer for the first time confronted with it that never before was such a combination of unclassified symptoms. When I say that these are the instances where in my personal observation some of our best trained colleagues in Europe and our own country have blundered I do not hesitate to array myself in the same category. Of these cases I am tempted to set down, as a French writer has written of chancres of the vaginal wall, "It is impossible that one shall not commit errors in the diagnosis." The figures in this picture are so numerous and so interesting that it would be impossible to portray them in the time at my command. Before closing I content myself, in the way of illustration, with four hastily sketched silhouettes, the shades of delicate distinction being purposely omitted:

1. A married woman with adult children had taught her parrot to kiss her on the mouth. During one of these episodes a child pulled the parrot's tail and the beak of the bird pierced the lip. In the course of weeks the face was thickly studded with deeply empurpled, olive-sized tubercles frightfully disfiguring. It was believed that the parrot had partaken of poisoned meat and had produced thus a septicemia. Diagnosis: syphilis papillomatosa. The woman had a lover who had infected the wound.

2. A middle-aged man had the right upper arm enormously tumefied and studded with livid tubercles rising from a densely infiltrated mass. One of the best surgeons in this country pronounced the patient leprous and advised operation. Later investigation by another medical man resulted in the discovery of finger nail-sized cicatrices in the mass and other suggestive lesions. Diagnosis: syphilis gummatosa, the morbid condition being eventually completely relieved by appropriate treatment.

3. A woman, 70 years of age and a grandmother, displayed multiple, dense, discrete, papulo-tubercles over the skin of the upper chest seated on a hard base. On the background of the senile and somewhat deeply pigmented skin the aspect of the dermatosis was almost, not quite, sufficient to justify the belief expressed that it was a case of pigmented sarcoma. Diagnosis: syphilis tuberosa. The old woman had been infected on the tonsil by a syphilitic grandchild. The mother of this

infant, daughter of the patient, was found later to be syphilitic, her husband admitting the fact of his own infection and exhibiting evidences of it.

4. A patient was presented to a medical class as a perfect illustration of elephantiasis arabum. The right leg and foot presented a very fair counterpart of the condition depicted in most of the published portraits of the disease named. The enormous bulk of the affected organ, covered with a dense, rugous, and elephantiatic integument, seamed, ridged, furrowed, deeply embrowned and, as usual in these cases, secreting an offensive discharge, completed the resemblance. On close inspection, however, the mass was seen to be composed of individual lesions, some resolving, some degenerating. Diagnosis: syphilis gummatosa. The limb was restored to a fair degree of usefulness by proper medication.

These instances might be multiplied a hundredfold from the experience of all experts, each, however, with a different exhibition of the oddities which may be evolved by this singular malady. It is capable of invading every tissue and every organ of the human body and in each playing such pranks as Ariel never dreamed of!

But let not the clear-headed practitioner become confused or resign himself to despair. In every one of these different cases great is the reward for the closely observant eye, the persevering patience, the exhaustive examination. In this field he that seeketh usually findeth. Behind the scrotum, lurking in the arched roof of the palate, over the heel of one foot, hidden in the depth of the testis, stamped over the shoulder or skin in the form of a scar, here or elsewhere, can often be found the tell-tale of the secret that eludes a casual survey or a hasty glance.

THE SERUM DIAGNOSIS OF SYPHILIS AND ITS CLINICAL VALUE.*

W. J. Butler, M.D.
CHICAGO.

In 1902 Bordet showed that it was possible to determine the bacteria causing an infection by an examination of the blood serum by a special method known as complement deviation. Complement is a substance present in the blood of man and animals. It is destroyed or rendered inactive by heating blood serum to 36° C. for one-half hour, on account of which property it is called thermolabile.

When the body is invaded by any pathogenic organism which sets up the infection it is capable of producing, the body cells react against the infecting organism and its products, producing an opposing body that finds its way into the blood stream. This is called an immune or antibody, which is also called an amboceptor, the purpose of which is to destroy in the special manner peculiar to it the infectious agent. This

* Read before the Chicago Medical Society, Jan. 20, 1909.

amboceptor is unaffected by heating the blood serum, in which it is contained, to 56 C. for one-half hour, and it is, therefore, termed thermostabile. Other substances, as blood corpuscles, proteids, lipoids, etc., may also give rise to the formation of antibodies when injected into the body.

An individual suffering from an infection, therefore, will have in his blood serum two substances, one called complement, which is present in all blood serums, and a second specific substance known as an antibody or amboceptor, the first being destroyed by a certain temperature (56° C.) in a half-hour and the second unaffected thereby. The amboceptor or antibody has two points of affinity, which may be represented by this diagram, one of which will always unite with the bacteria or product the injection of which gives rise to its production by the body, and the other with complement when it is present, this union causing the destruction of the bacteria or toxic product. This action will occur in a test-tube under favorable conditions, as well as in the body.

The following is an example: If you inject into an animal of one species, as represented by the rabbit, the blood corpuscles of another, as represented by the sheep, the rabbit will react against the foreign corpuscles producing an antibody, called in this instance a hemolytic amboceptor. This amboceptor has, as mentioned above, two points of affinity, one of which will unite with sheep's corpuscles and the other with complement, the union resulting in the destruction or solution of the corpuscles. In this way the foreign corpuscles are disposed of in the body of the rabbit. This rabbit, however, has manufactured antibodies in excess of its needs and it will be found that if you bring into contact in a test-tube the serum of the rabbit and sheep's corpuscles the solution of the latter will occur. This solution has resulted because the rabbit's serum contains the two bodies necessary to the solution, namely, a specific antibody (hemolytic amboceptor) and complement.

If this rabbit serum is first heated to 56° C. in a water bath for one-half hour, the complement will be destroyed, as above described. If now you mix this heated serum with the blood corpuscles in a test-tube, the amboceptor which was unaffected will unite with the corpuscles with one point of affinity, but the other point for complement will be unsatisfied (as the complement was destroyed by heat), and, therefore, solution of the corpuscles, for which it is essential, will not occur. If, however, you add any other fresh blood serum, as guinea-pig serum, which always contains complement, this necessary factor will be supplied and solution will occur. I have thus explained at length this phenomenon, as on this question of complement the entire syphilis reaction depends.

To recapitulate somewhat, it was stated that when you bring the blood serum (immune sera) of one infected patient in contact with the agent that caused the infection the antibody of the serum would unite with the infectious agent with one of its points of affinity and with the other it would unite with or bind complement.

As the infectious agent in syphilis is not definitely known, at least has not been cultivated, it occurred to Wassermann that an extract of a syphilitic organ might contain the infectious agent and enable one to demonstrate the corresponding antibody in the serum of a syphilitic, and in this manner enable one to diagnose syphilis from the blood. While subsequent work has indicated that the infectious agent is not the one concerned in the test, in this instance, it has proved that the antibodies to which this something gives rise are found only in the blood of syphilitics and, therefore, we have a specific blood serum test for syphilis.

If the organ extract, the preparation of which will be described below, is brought in contact with syphilitic sera, the antibody contained in the latter will unite by one point of affinity with the organ extract and by the other with complement. As this change is not visible to the eye, because no precipitate or color change occurs, it is necessary to resort to some means or indicator for finding out whether such union had occurred. To this end the Bordet principle is used as follows:

If the serum of the suspected syphilitic is heated to 56° C. to destroy the complement, before it is mixed with the syphilitic organ extract, the antibody of the serum, if present, will unite by one point of affinity with the organ extract; a fresh serum, as guinea-pig serum, is added to supply complement. If the serum was syphilitic and contained the specific antibody, the added complement will be fixed on it. To demonstrate whether the latter has occurred or not, you now add the heated serum of a rabbit that contains an antibody that will destroy in the presence of complement sheep's corpuscles. Sheep's corpuscles are also added. If the complement contained in the guinea-pig serum that was added was taken up, or united with by the syphilitic antibody, there will be none left over and consequently the added sheep's corpuscles will not be dissolved. If, however, the serum was not syphilitic, the complement will not have been taken up, but will be left over for union with the hemolytic amboceptor of the inactivated rabbit serum, which latter unites with the blood corpuscles and the combination causes the solution of the latter.

SUBSTANCES EMPLOYED IN THE TEST AND THE METHODS OF THEIR PREPARATION

is as follows:

First. Organ Extract.—This should be made preferably from the liver of a dead syphilitic new-born. The liver is ground up with sterile sand in a mortar and thereafter placed in a flask. Alcohol is added in the proportion of 5 c.c. for every gram of liver. The mixture is well shaken and kept in the flask. Enough of the extract may be filtered off through filter paper as needed in the test. An alcoholic extract, made in this manner, is very stable.

Serum of Patient.—The blood of the patient is obtained either from a puncture in the end of the finger that has been constricted by a bandage or by a hypodermic needle from a vein. Two to 10 c.c. should be

secured. It is allowed to clot and stand on ice until the serum separates, which takes in about twelve hours. The serum is poured or pipetted off into a sterile tube. If not clear it is centrifuged and the clear serum only removed. This is heated to 56° for thirty minutes to destroy the complement.

Complement.—Guinea-pig serum is used for its complement. The animal may be bled from the jugular. The blood is allowed to clot, and the serum is poured off and centrifuged, or the blood may be defibrinated and centrifuged at once and the serum removed. This is best obtained fresh every time a test is undertaken. Sometimes complement may remain good for three or four days if kept on ice. This, however, is never certain, and many failures in making these tests are due to the serum having lost much of its complement.

Specific Hemolytic Amboceptor.—It is my custom to use the serum of a rabbit that has been immunized with sheep's corpuscles. This is obtained by injecting the rabbit with a 5 per cent. suspension of washed sheep's corpuscles into a vein, under the skin or into the peritoneal cavity of a rabbit, weekly for several weeks. The rabbit is then bled from the heart or jugular, the blood collected, allowed to clot and the serum collected and centrifuged. The clear serum is removed and heated to 56° C. for half an hour to inactivate it.

Sheep's Corpuscles.—About an ounce of blood is removed from the jugular of a sheep through an aspirating needle. It is defibrinated by a sterile rod of wire or by glass pearls. About 5 c.c. of the defibrinated blood is placed in each of two centrifuge tubes. The tubes are then equally filled with salt solution, the tubes inverted to mix the blood well and they are then centrifuged. When the cells have settled to the bottom the salt solution is poured off and fresh salt solution added. The process is repeated and all of the supernatant fluid is carefully removed.

An equal quantity of salt solution is now added to one of them which gives a 50 per cent. suspension for the test. The corpuscles contained in the other tube are suspended in enough salt solution to make them a 5 per cent. suspension. This is available for injecting rabbit. Before beginning the actual reaction it is necessary to examine the different ingredients used in the reaction: First, to see that the extracts do not, in the proportion used in the reaction, bind complement; second, to see that the complement is active; third, to determine the strength of the amboceptor; fourth, to see that the blood corpuscles are not hemolyzed.

The extract should be tried out with a known syphilitic and normal serum to see that, in the first instance, it inhibits hemolysis and, in the second case, does not do so. It will be found that in trying fresh extracts they may bind complement alone in the proportions generally used. Under these circumstances they should be diluted to that point where they will not, in twice or three times the quantities used in the reaction, inhibit hemolysis alone.

Second. Complement.—If the guinea-pig serum is obtained the day of the reaction, it will always be found active. Occasionally it will hold good if kept on ice for two or three days.

Third. Amboceptor.—The inactivated rabbit serum is tested in various dilutions of one drop to 1 cubic centimeter, etc., up to 8 or 10 cubic centimeters of salt solution. A drop of each dilution to a drop of complement and a drop of 50 per cent. suspension of sheep's corpuscles are placed in separate test-tubes to which had been added in each instance ten drops of salt solution. All are placed in an incubator for one-half hour. Note is made of the highest dilution of amboceptor that caused solution. Three times the strength of this is used in the reaction. The blood corpuscle suspension may remain good, if kept on ice, for four or five days. If there is a trace of hemolysis as is indicated by the dark red color of the supernatant solution, they had better not be used and a fresh suspension prepared.

The Performance of the Reaction.—A series of test-tubes are required, to each of which ten drops of salt solution have been added. For every serum two test-tubes are necessary. To each add a drop of serum to be tested, and to one of these add a drop of organ extract; to both add a drop of complement.

Controls.—To one tube add a drop of extract and one of complement, this serving as a control on the extract. To one tube add a drop of complement only. To another tube add a drop of one of the sera being tested to see if it has been sufficiently inactivated. Place all tubes in an incubator for one-half hour. Remove and add to each a drop of diluted amboceptor and one of blood corpuscles. As additinal controls add a drop of amboceptor and one of blood corpuscles to a test-tube to see if the amboceptor alone dissolves blood corpuscles. Replace in the incubator for one and one-half hours. On removing the tubes from the incubator, a reading is made and noted, and a second reading, which is the final one, is made 12 to 24 hours later.

For the test to have been reliable, all controls must have been satisfactory. In tubes containing extract and no serum, hemolysis should have occurred. Tubes containing sera and complement without extract should be hemolyzed. In case the controls are satisfactory, all tubes containing sera and extract in which hemolysis did not occur at all or only incompletely are regarded as positive; all those in which hemolysis is complete or practically complete are negative. In every test known, syphilitic and normal sera should be used as controls against the suspicious sera. It is to be observed, however, that occasionally normal sera and also syphilitic sera will undergo such changes on standing some days as to entirely change their action with syphilitic extract. This should always be borne in mind where in subsequent reactions they act differently from previous examinations.

Specificity of the Serum Reaction.—For the reaction to be considered specific for syphilis it was necessary that the reaction should not only be found positive in cases of syphilis, but that it should prove

uniformly negative in non-syphilitic cases. Up to this time controls into the thousands have been examined and the infrequency of positive reaction obtained in those certainly non-syphilitic has been so evident as to remove all doubt as to its specificity and clinical applicability.

Landsteiner, however, found that the serum of rabbits that had been inoculated with trypanosome equiperdum, producing "dourine krankheit," caused an inhibition of hemolysis. He suggested that it might be found that diseases caused by trypanosome and protozoa would give the reaction. Much and Eichelberg have recently reported finding an inhibition, never complete, of hemolysis in a number of scarlet-fever cases, and, holding Landsteiner's experience in mind, suggest that scarlet fever may be due to a protozoa infection.

I obtained the reaction in three cases of noma in which the *Bacillus fusiformis* and a spirillum are regarded as the etiologic factors.

PRACTICAL RESULTS OF THE REACTION.

The results of the reaction in cases of syphilis, latent syphilis and metasyphilis show a relative constancy in the frequency of positive reactions. In the earlier work with the reaction by Neisser, Bruck and Schucht, the incompleteness in the technic probably was responsible for the comparatively small per cent. of results obtained by them in cases of syphilis. Wassermann's and Plaut's examinations of the spinal fluid of tabes cases showed positive reactions in 78 per cent. of them. Marie and Levaditi obtained practically the same results in cases of general paresis.

Without entering into an extended discourse on the results obtained by various investigators, I will give the results obtained by me in 203 examinations with the serum reaction. Fifty-three of these cases were controls, made up of cases of various infections, including typhoid, pneumonia, tuberculosis, etc. The results of these examinations were uniformly negative, except in three cases of noma and four of scarlet fever. The reactions in the noma cases were quite marked, while in the scarlet-fever cases that gave a positive result the inhibition of hemolysis was slight. It is possible that in the noma cases the suggestion of Wassermann, that cases of infection caused by spirilla might give the reaction, is exemplified, in view of the fact that noma is said to be due to the fusiform bacillus and a spirillum. Whether the same explanation will hold good for scarlet-fever cases giving a reaction must be decided in the future. In any event these are both infections with which syphilis would hardly come into conflict in differential diagnosis. Thus, instead of lessening the value of the serum reaction, it may be looked upon, as Wassermann suggested, as a broadening of the application of the test to other diseases caused by spirochætæ, protozoa infections, etc., that would not come into consideration in the differential diagnosis of syphilis.

Of the 150 cases of syphilis, suspected syphilis, latent syphilis and metasyphilis examined, 123 were positive and 27 negative, making 82 per cent. of positive reactions. This corresponds quite closely to the

later results obtained by various investigators in these cases. The gross figures, however, do not indicate sufficiently close the results obtained by the reaction at different stages of the disease, as will be seen from the following: Of ten cases in the primary stage, including all cases prior to the appearance of secondary symptoms, all, or 100 per cent., gave a positive reaction; thirty-six cases in the secondary stage, 34, or 95 per cent., gave a positive reaction; thirty-one cases in the tertiary stage, 29, or 94 per cent., gave a positive reaction; sixteen latent cases, of which 9, or 56 per cent., gave a positive reaction; fifty-five cases of parasyphilis and visceral syphilis, 41, or 76 per cent., gave a positive reaction; two cases that had been treated energetically by mercury, the one with injections and the other with inunctions, gave a negative reaction. The latter case had, before the beginning of the treatment, given a strong reaction.

The result of the reaction in diseases of the central nervous system has been especially illuminating. This has been particularly so in cases of general paresis and tabes. In first examinations of this class of cases the spinal fluid was examined by Wassermann and Plaut, by Marie and Levaditi, by Schutze and by Morgenrath and Stertz. They found from 70 to 80 per cent. of these cases to give a positive reaction, and more recent examinations of the sera of this class of cases by Plaut, etc., show them to be positive in from 90 to 100 per cent. Whatever doubt may have existed as to their relation to syphilis has been fully dispelled. In fact, as claimed by Lesser, they might, as well as all other parasyphilitic processes, be considered as a quartan stage of syphilis, in which another form of pathologic changes differing from the usual gummatous or diffuse fibrous changes exist, but are dependent on the same source, directly or indirectly.

Among the cases of visceral syphilis examined by me were cirrhosis hepatis, aortic aneurism, myocarditis, specific arteritis, etc. It is quite interesting in this connection to note the infrequency with which visceral syphilis, excepting syphilis of the nervous system, is clinically diagnosed. Gummata of the brain are usually recognized symptomatically, because of the pronounced clinical manifestations to which they give rise. No so, however, with gummata of the other viscera. This may be either because the gumma is so located that it does not interfere with the function of the organ and, therefore, does not give rise to symptoms, and its site may be out of reach of the palpating hand, or because, on the other hand, syphilis of an internal organ may produce a clinical picture simulating other conditions. No better example of this might be cited than syphilis of the liver, which may simulate malignant growth of this organ, cholecystitis, obstructive jaundice, etc. Failure to consider syphilis as an etiologic factor under such circumstances is due sometimes to lack of acquaintance with such conditions, at other times to the fact that no evidence of past syphilis is present, nor any history of the same obtainable. And still in every disorder of the liver and in every prolonged febrile disturbance in which the etiologic factor

is uncertain, syphilis should receive consideration and the serum test should be resorted to. It is a notable thing that, while an infection in one organ may give rise to little or no febrile disturbance, the most decided febrile reaction may result from the same infection when it attacks another organ. No better example of this could be cited than the infection known as mumps, which, while it may cause but slight variations in temperature while confined to the parotids, shows a marked febrile disturbance when it attacks the testicle. A reversal of this is noted as between syphilis attacking the testicle and liver. Occasional reports have appeared during the past decade and a half on temperature accompanying syphilis of the liver. These cases are more frequent than is generally recognized, and not a few of them come to the operating table, and occasionally even there are unrecognized. Leser, in his post-mortem studies of visceral syphilis, saw thirty cases of liver gumma that had not been diagnosed clinically. In twenty-two cases no clinical symptoms pointing to them occurred. In eight cases of liver cirrhosis their syphilitic character had not been recognized. Nineteen cases of gumma of the lung, often combined with tuberculosis, had not been recognized clinically, and likewise three cases of gumma of the heart, two of the spleen, two of the suprarenals, and two of the radix mesenterica. A not infrequent result of syphilis which is practically never diagnosed clinically is the mesoaortitis retrahens of Heller, and syphilis of the arteries in general, until the secondary manifestations arising therefrom render them evident. A forcible emphasis of this serious shortcoming in our diagnostic methods is the fact that about 80 per cent. of all aortic aneurisms have their origin in a mesoaortitis retrahens. As this condition is, therefore, only recognizable practically with the appearance of a full-fledged aneurism, the vitally important period of therapeutic intervention by specific treatment has elapsed. While it should concern us seriously to recognize at the earliest possible moment aneurisms by means of the *x*-ray, etc., knowing the apparent advantages occurring in early treatment, we are placed in a far stronger position, parallel to what the surgeon is wont to term with relation to cancer the "precancerous stage," by virtue of the serum reaction, which enables us, in the vast majority of cases, to determine the existence of active syphilis, hence is of incalculable value from a therapeutic standpoint in syphilis of internal organs that obscure themselves from early diagnosis or that unfortunately simulate other pathologic conditions.

An exceedingly interesting observation from Leser is that in Berlin in about 9 per cent. of all men over 25 years that come to autopsy syphilis is anatomically demonstrable. And in most of these symptoms immediately depending on the changes may not have been complained of, to-wit, gumma of the liver, mesoaortitis retrahens, orchitis fibrosa, etc. In this connection our present conception of latent syphilis must undergo considerable adjustment. As it is estimated that about 20 per cent. of the male population of Berlin over 25 years of age have syphilis, this 9 per cent. presenting evidence of visceral syphilis, would represent

about half the cases that have had syphilis. While the majority of those cases are apparently free from evident manifestations of syphilis during life either by virtue of treatment or apparent abeyance of the infection, it is more than probable that in this 50 per cent. of cases the apparently quiescent virus sits in some internal organ or organs surrounded by more or less of pathologic changes.

A remarkable coincidence and apparent substantiation of this statement lies in the fact that, in round numbers, about half of the latent cases of syphilis, in the experience of various investigators, give the serum reaction. In other words the frequency of the serum reaction in latent cases is about the same as the frequency of syphilitic processes in the internal organs that are not generally recognized during life. No stronger possible argument than this could be introduced to prove that a positive Wassermann reaction indicates an existing syphilitic process in the organism.

The clinical advantages of the serum reaction for detecting such cases and subjecting them to treatment is clearly evident, especially when we remember that, next to tuberculosis, syphilis is the most important cause of death in man.

CONGENITAL SYPHILIS.

One of the interesting chapters in the syphilis question is that which relates to congenital syphilis. I have examined eleven cases of congenital or suspected congenital syphilis; these are not included in the above statistics. Six of these were under one year; five were older children, from 1½ to 12 years. Of the latter, one, a girl of 12 years, had bilateral periostitis; a boy of 10 years mentally defective had extensive ulcers on both thighs and legs; a boy of 2½ years had a large ulcer at the margin of the anus; the other two had specific skin lesions. All of these children gave a strong positive reaction for syphilis. As they were hospital cases in which close historical data as to maternal and paternal infection were unobtainable, any analysis of them with relation to the latter was not possible. It simply demonstrated the certainty of obtaining the serum reaction in congenital as well as acquired syphilis, and its constancy in the presence of manifestations.

Among the suckling children were two that had had manifestations of syphilis from the sixth or eighth week of life, although at the time of examination all external manifestations had disappeared, both having been under treatment. These babies gave a positive reaction. The parental history in one of these is as follows: Father had contracted syphilis within a year of his marriage, during the greater part of which time he was under treatment. Mother had not shown any evidence of syphilis before or subsequent to the birth of the child. No glandular enlargements. Skin and mucosa free from any lesions or scars. The blood serum and milk of the mother were examined several times and were always found negative. In the other case both parents had syphilis,

the mother having contracted it from her husband before the conception of this child. The parents and child gave a positive reaction.

An infant of four months was brought to Dr. Wolf on account of a large head and because it did not seem as lively as other infants. The child had not shown any of the skin or mucous membrane symptoms of syphilis. The mother had never, to her knowledge, presented any symptoms. The blood serum of both and the milk of the mother were examined. The infant gave a positive reaction and the mother a negative one. We apparently have here, as well as in the first case, a concurrence with Colle's law, namely, the apparent immunity of the mother and a syphilitic child. Attention was first called to the association of hydrocephalus with congenital syphilis by Virchow, and we have here a case which would seem to confirm this connection. It is to be particularly noted here that, so far as the parent had observed, no eruption or snuffles had existed in her baby. In another case an infant of five months born of a mother suffering from tertiary syphilis had not shown at any time any evidence of syphilis and was an unusually well nourished and healthy child. Examination of the child's blood revealed a positive reaction for syphilis.

This is a class of infants to which I directed attention in a report on two cases of syphilis of the nervous system occurring in children who, so far as obtainable history was dependable, had not shown symptoms of syphilis. The syphilitic character of a cerebrospinal meningitis in one case was revealed by the appearance during the attack of interstitial keratitis, and in the other case, one of cerebral palsy with almost complete amaurosis, an old atrophic chorioiditis existed. As infants with congenital syphilis are liable to all the lesions of the nervous system and other internal organs that a case of acquired syphilis is subject to, the detection of this class of cases whose luetic symptoms were sufficiently insignificant to be overlooked by the parent is all important in order to anticipate and prevent the outbreak of lesions of the viscera.

In another case, a new-born infant, born of a syphilitic mother, whose symptoms first appeared in the fourth month after conception, appeared to be healthy. The child's blood was examined several times during the first four or six weeks of life, and each time it proved negative. The mother's blood serum and milk gave a strong reaction. It seemed probable that this woman contracted her syphilis after conception. In this event, according to Profeta's law, it might be expected that the child would remain immune, and, while our observation had only stretched over several weeks, during this time the serum reaction remained negative and no symptoms appeared in the baby.

It is a matter of interest to note that this test may be made with the breast milk of nursing mothers as well as with their serum. The results with milk are not quite as satisfactory as with the serum, because the milk serum is always more or less turbid. This turbidity of milk serum, unless due allowance is made, may give rise to a false interpretation of the reaction when used in the test and might, therefore, be misleading.

If due allowance, however, is made for this, an examination of milk may be found satisfactory. The advantage of this would be considerable in places where wet nurses are employed, as by an examination of the milk a determination of the non-syphilitic or syphilitic character of the nurse may be determined.

There is nothing more difficult at times to decide than whether a given individual has had syphilis or not. This is particularly true of women who may present such transient manifestations as to have escaped serious attention; or who, on the other hand, may have denied an infection, all evidences of which have disappeared, as is not infrequently the case. In these cases we have heretofore had no really decisive diagnostic recourse up to the present time. Hence the importance of the serum reaction in this class of cases. While it might be impracticable to attempt to estimate the degree of danger of infection through a wet nurse that had latent syphilis, I think no one would hesitate in his decision as to her unsuitableness.

On the other hand, it is no less important to the wet nurse that the infant should not be syphilitic, as was the case in a report by Watson, in which he stated that in Baltimore a nursing mother received from some charitable organization into her own home to board a suckling that proved to be syphilitic. The wet nurse contracted syphilis from the child, gave it to her own infant, and from her own infant her little girl of six or eight years of age contracted syphilis by kissing. This deplorable situation could hardly have arisen had ordinary medical care in inspecting children, before placing them in homes, been observed. As an additional safeguard, however, in all cases the serum reaction might be resorted to, as it was noted above that a child born of a syphilitic mother had been free of all manifestations of syphilis, and still gave a positive serum reaction.

Wet nursing is not as common a practice in our country as it is in some foreign countries. Where it is resorted to, and it can be at times with greatest advantage to the infants, the most rigid inspection of both should be carried out, preferably reinforced by the serum reaction. Success in obtaining the reaction in the milk of syphilitic women led to examining the urine. Blumenthal and Wile reported finding a positive reaction with the urine of many syphilitics, indicating that the substance contained in the blood serum that gives the reaction is not only excreted by the mammary gland, but also by the kidney. Since they found that all urines delay hemolysis and in many instances inhibit in some degree, it is evident that this method is not dependable.

INFLUENCE OF ANTISYPHILITIC TREATMENT ON THE REACTION.

Citron was the first to observe that the antiluetic treatment exerted a considerable influence on the result of the reaction. He considered this so evident that he incorporated his views on this question into two laws, as follows:

The longer the syphilis virus has worked in the body, and the oftener it has caused recurrences, the more constant and stronger is the antibody content of the serum.

The earlier the mercurial treatment is started, the longer continued, the more frequently it is repeated, the more advantageous the method of application, and the shorter the interval since the last cure, the less is the content of the antibody and the more frequently the reaction is negative.

While it is not by any means a uniform observation, one is constantly impressed with the diminution in the intensity of the reaction or its complete disappearance in many such cases. Some authors have ventured to give figures indicating the number that have been and have not been influenced by therapy as interpreted from the reaction. These, however, have usually based their observation on more or less limited periods of treatment and, furthermore, fail to consider the persistence of the activity of the infection in internal organs long after it has ceased to show its effect on visible structures.

It is quite noticeable that recent cases of syphilis under rigid antisyphilitic treatment will often show on examination a lessened intensity or disappearance of the reaction, while old cases with tertiary recurrences appear to show less effect on the serum reaction in similar courses of treatment. This, however, is readily comprehensible when we remember the difference in time that the virus is exerting its effect on the organism and likewise the, in all probability, more deep-seated lesions in the late forms, possibly involving hidden structures. Cases that have been well treated and managed show a positive reaction less frequent than those that have been treated indifferently or practically not at all. While the latter class of cases occasionally may not show a tendency to recurrences, in the main they are disposed to them, and consequently the serum reaction is very likely to be found positive, as it is in the vast majority of all cases with manifestations.

A notable feature in all reports with regard to the effect of treatment on the reaction is that the results have been based on comparatively short periods of treatment. It is more than probable that such results, if obtained after treatment for the usual time that cases of syphilis are ordinarily treated, would show a far greater per cent. of disappearance of the reaction and that we would have in the reaction a reliable index of the cure or abeyance of the affection.

In old syphilitics in whom the manifestations do not seem amenable to mercurial treatment, the serum reaction might be expected to exist. Fleischmann suggests, on the basis of Ehrlich's work with atoxyl in trypanosome infections, that in these cases the virus becomes mercury immune and consequently is unaffected by mercurial treatment. Citron, in his first publication, thought that not only did he observe an influence of treatment in general on the reaction, but also a more pronounced effect in cases under inunction than in those under injection treatment. The observations on this phase of the subject are insufficient to justify a positive opinion.

DIAGNOSIS.

The diagnostic value of the serum reaction has been placed beyond all doubt. Excepting in the few instances above referred to, a positive serum reaction for syphilis may be looked upon as certain evidence of the patient having syphilis.

The great advantage of a positive means of diagnosis for syphilis will be appreciated by every practitioner of medicine, because of the not infrequent instances in which clinical history and physical examination leaves one unable to decide whether or not the patient has had syphilis. The point should be emphasized that it is positive in from 95 to 98 per cent. of all cases with manifestations. So that, given a case in which syphilis is suspected from the presence of certain manifestations, a positive reaction establishes the etiology; on the other hand, a negative reaction carries considerable weight in excluding it. And by manifestations I refer also to lesions of internal organs in which I personally am most interested. The fact should be held in mind, however, that, while a positive reaction indicates that the individual has syphilis, it does not necessarily prove that the particular lesion from which the patient is suffering is syphilitic. This same point holds good in practically all immuno-diagnostics. They indicate positively, however, a systemic reaction against the particular infection for which they have been tested where the reaction is found. Whether this result may be brought in etiologic relation with the particular condition from which the patient suffers must be decided by clinical data.

PROGNOSIS.

What interests us particularly in the prognosis is what value we may place on the presence or absence of the reaction in judging (1) the status of a patient, (2) contagiousness, etc.

The intensity of the reaction in different cases varies considerably. It might be of considerable assistance could we judge from its intensity, the mildness or severity of the infection or likewise of the slight reaction or marked virulence of the virus. Any deductions based on the intensity of the reaction would seem to be unfounded, and there is no uniformity with regard to this in different cases so far as one by clinical data could decide. The presence or failure of the reaction, however, permits of conclusions in the majority of cases of vital importance to the patient. Attention was directed to the fact above, that cases with manifestations gave, in the vast majority of cases, the reaction, while in many cases without manifestations, to wit, those that had been well treated, the reaction failed.

Of great importance at all times is the finding of a positive reaction. Where evident manifestations are present, we expect this, but where they are apparently absent a positive reaction should cause us to think seriously on the possible ravages of the virus elsewhere, hidden from view. It is possible that in this class of cases, apparently latent, but still giving a positive reaction for syphilis, we are dealing with changes

in internal organs possibly of minor import or, perchance, of a serious character, attacking, for instance, the nervous system, etc.

If we are justified by a positive reaction to assume activity of the virus, and most investigators are inclined to take this position, then we may possibly have in the serum reaction a means to control our patient's destiny and protect him from the serious consequences of late syphilis of internal organs or possibly the parasyphilitic affections to which some of them are prone, by instituting, if the result of the reaction is positive, vigorous antisyphilitic treatment, and possibly by this means protect him from these visceral and parasyphilitic affections. For this method of control to be effective, however, it would necessitate comparatively frequent examinations of the blood, as there is no means of knowing how long this reaction would remain negative and consequently how long the patient would be protected from the ravages of the disease.

While the present status of this work would not permit any positive statements with regard to protecting the syphilitic from these late forms of syphilis and parasyphilis, the serum reaction is the first thing that promises any possibility of its solution. It has placed beyond all doubt the etiologic relation of syphilis to progressive paresis and to tabes, and it is not beyond the range of possibility that it might enable us to avoid their development in well-controlled cases. No greater responsibility of the profession could be imagined than its responsibility to syphilitics in protecting them from these consequences, and it is to be hoped at least that the serum reaction will enable us to solve this problem. It is self-evident that no statements concerning the contagiousness of syphilis during periods of a negative reaction could be made.

THE RELATION OF THE REACTION TO ANTISYPHILITIC TREATMENT.

The significance of the reaction with regard to therapeutics may be summed up as follows:

If we are to accept the reaction when positive as an indication of activity of syphilis, then it follows that a positive reaction is an indication for antisyphilitic therapy. On the other hand, we could not consistently advise its interruption with the disappearance of the reaction, because we know that the disappearance of the reaction and likewise of all specific manifestations may be followed in a shorter or longer time by the appearance of both. I do not believe that we would be justified in awaiting the reappearance of the reaction always before resorting to a systematic periodic antiluetic treatment in a case of syphilis, because the point should be kept in mind that this, like many other immunodiagnostic recourses, may at times fail.

It has emphasized one point, however, and that is not to await the appearance of external manifestations before instituting treatment, that syphilis is not cured even when the skin and mucous membrane lesions have long since ceased to appear.

In the present light of our knowledge of syphilis, it would seem that intelligent management of syphilitic cases not only demands clinical

judgment, but a far more important factor, namely, the serum reaction for syphilis. Irrespective of absence of all external luetic manifestations, the serum reaction is an indication for antisyphilitic treatment.

In conclusion, I wish to thank Drs. W. T. Mefford and J. P. Long for assistance in laboratory work.

1487 Jackson Boulevard.

THE VALUE OF THE SPIROCHÆTE IN THE DIAGNOSIS OF SYPHILIS, WITH SPECIAL REFERENCE TO THE PRIMARY LESION.*

B. C. Corbus, M.D.
CHICAGO.

It is now almost four years since the discovery of the *Spirochæte pallida* was announced to the world and, like all new discoveries, it has received its full share of criticism and condemnation, a large part of which was due to the difficulty of staining and the unsatisfactory method of obtaining the organism. We regret to say that there are still many syphilographers in this country who have not accepted the *Spirochæte pallida* as the etiologic factor in syphilis. If they have they make no use of it in the diagnosis of the initial lesion and still wait for secondary manifestations before beginning treatment.

With the discovery of the dark ground illuminator, the observation of the different forms of the spirochæte have been resumed with renewed vigor. By this method we are able to study the organisms in their original form; here, side by side, we may observe the *Spirochæte refringens, buccalis* and the *pallida*. Note carefully their size and thickness, their windings and their motility. This was not at all possible with the staining methods. Especially is this true of the pallida, which in the stained specimen loses its characteristic windings. It is little wonder that the different forms simulated each other closely, and as a consequence the difficulty of differentiating the various forms was well nigh impossible.

The diagnosis of the chancre at the present time should be based upon a laboratory diagnosis. This consists of the immediate finding of the spirochæte in the lesions. The diagnosis of the later manifestations of syphilis should be made by the serum test of Wassermann.

The demonstration of the spirochæte by means of the different staining methods is recognized as very unreliable and should be replaced by the examination of the living organisms by means of the dark ground illuminator. There are still some pathologists who cling to the antiquated methods of staining for the demonstration of the organism. These men are reluctant to give up the old methods for the new. Any observer who has had the opportunity to see the demonstration of the

---

* Read before the Chicago Medical Society Jan. 20, 1909.

living organism can see its vast superiority over the staining method and its *immense immediate clinical value*. With this method we are no longer dependent upon the skill of trained pathologists, as the finding of the organism by this method is as uncomplicated as the simple staining of the gonococcus by methylene blue. The method of obtaining the material is as follows:

After we have carefully cleansed the suspected lesion and gently irritated it by means of a cotton swab, we have an abundant exudation of serum. This is collected in capillary tubes and is ready to mount. It is but a few moments' work to prepare our slide. Mount the specimen and examine. Scarcely five minutes need be consumed in the procedure. In chancres, condylomata and mucous patches where no treatment has been given the specimen abounds in organisms. In those cases where the primary lesion has been treated with a dusting powder or salve containing hydrargyrum, it is but a simple matter to puncture the inguinal glands and demonstrate the organism.

During the past eight months we have examined 150 cases, including chancres, condylomata, mucous patches, papules and inguinal glands. In no single instance where we have demonstrated the organism has the subsequent course of the case shown our diagnosis to be wrong. So confident are we in regard to its specificity that we must reiterate our previous conclusions:

1. That the spirochæte is the true cause of syphilis, and its presence is equivalent to the diagnosis of syphilis, but its absence does not rule out syphilis.

2. By means of this method the spirochæte may be demonstrated in all primary and secondary lesions of syphilis if the search is persistent.

Since we have been making our diagnosis from the primary lesions, the question has often been asked: What is the value of the early diagnosis of syphilis, and what is the harm in waiting for the secondary eruption before beginning treatment? This answer is, indeed, obvious.

If we had a severe pus infection of the finger we would not wait for systemic invasion before attacking the primary focus. The same is equally true of syphilis, although there are some that will argue that at the time of the appearance of the primary lesion the infection is already systemic. Neisser has shown in his experiments upon monkeys, in a few cases, the presence of the spirochæte in the bone marrow with the simultaneous appearance of the primary lesion, but the majority of his experiments tend to show that the organism does not make its appearance in the blood stream until 10 to 21 days after the appearance of the chancre.

In the light of the modern investigations of syphilis, to neglect our diagnosis until the system has become invaded by the spirochæte is to do our patients an injustice. It is our duty to make a diagnosis as soon as possible and to begin our treatment before the system is thoroughly saturated with the organisms of syphilis. Some observers contend that to begin treatment so early predisposes to the parasyphilides, as patients

so treated are prone to make light of their disease, and after one or two courses of hydrargyrum to conclude that they have had sufficient treatment. This, in a measure, is true, but it is our duty to explain the condition to our patients, show them the benefits of persistent treatment after symptoms have disappeared. If such a procedure is carried out, the relapses will be less frequent.

With the discovery that the primary lesion contains such large numbers of spirochæte, the question arises, What is our disposition of the chancre? Since the time of Ricord excission of the chancre has been practiced by many surgeons, some claiming that at times they were able to abort syphilis. It must be conceded by all now that this is out of the question.

But such observers as Lukasiewicz,[1] Jadassohn[2] and others claim that by excission of the chancre, if done before the period of second incubation, our infection is attenuated. It certainly is reasonable to suppose that, if we have a large area that is constantly feeding the system with infecting organisms, that area should be removed, especially since its removal does not entail any serious effects upon the patient.

Acting under the previous conclusions, wherever it is at all possible, without undue loss of tissue, we have removed the chancre. In those cases where the lesion is so situated as its removal would cause extensive destruction of tissue, we have been satisfied with thorough cauterization and curettement. To justify our procedure, we have examined the excised chancres by means of the Levaditi method and found them all swarming with organisms.

As all the manifestations of syphilis, whether cutaneous or visceral, are characterized by the collection of colonies of spirochæte, and as it is our custom to administer hydrargyrum to cause the destruction of the same, we believe we are following a rational therapy when we remove in mass our first known collection of spirochæte, that of the chancre.

In order to get these patients under the influence of mercury as soon as possible, our practice is to begin treatment at once, our aim being to annihilate the spirochæte before they have time to become disseminated.

CONCLUSIONS.

First.—The greatest value of Shaudin's discovery is that it enables us to make a positive diagnosis from the primary lesion.

Second.—All primary lesions show the *Spirochæte pallida.*

Third.—We believe that the diagnosis should be made from the primary lesion.

Fourth.—After the spirochætæ have been demonstrated in the primary lesion, only harm can be done in waiting for other manifestations before beginning treatment.

---

1. Polish Zeitschrift Dermatology and Veneriologie, 1907, M. 7 and 8.
2. Archives Dermatology and Syphilis, June 19, 1907.

CONGENITAL SYPHILIS.

I. A. Abt, M.D.
CHICAGO.

(Abstract.)

Dr. I. A. Abt, Chicago, said that a considerable number of syphilitic infants, apparently well at birth, die of marasmus before the end of the first year. Babies with congenital syphilis show a high mortality. No primary lesions occur. For this reason it is assumed that the disease very soon takes on the character of a severe general infection, and for the same reason it is thought that the virus of the disease must diffuse itself rapidly. Levaditi, Verse and others found it possible to demontrate spirochætæ regularly and in large numbers in the organs of syphilitic infants. Many experienced clinicians doubt the occurrence of congenital syphilis years after birth without the occurrence of early symptoms, believing that the early symptoms were overlooked. Congenital syphilis is almost at once a general disease, and for this reason the lymph glands do not play the part that they do in acquired syphilis. The lymph nodes are seldom involved to any great extent, but the visceral organs in congenital syphilis are very soon involved. Hochsinger makes the point that circumscribed gummata are far less frequent than diffuse infiltration of organs in congenital syphilis. The skin lesions occur, for the most part, later than those of the internal organs. Children are not born with this skin condition. It usually occurs at the fourth week, or later, and does not occur after the first year. It is observed that the skin at the site of this lesion is smooth and glossy, due to the tension produced by infiltration of the underlying skin. The second form of skin lesion characteristic of congenital lues is pemphigus. The most frequent and characteristic localization is the palms and soles, though other parts of the body may be involved.

The author discussed the causal relation of congenital syphilis to rickets, the joint affections which belong to the early period of congenital syphilis, the muscle changes in congenital syphilis, the changes which are observed in the heart, the changes in the vascular wall in congenital lues, and the lesions of the lungs in this condition. He further pointed out how congenital syphilis attacks the mucous membrane of the nose, gastrointestinal tract, the liver, the nervous system, kidney, testicle, spleen, the thymus, etc.

Referring to the statistics of Castens, who examined 791 cases of congenital lues, it was found that the liver was involved 597 times, the bones 496 times, the lungs 408 times, and the spleen 384 times. A considerable gap occurred at this point, showing the kidneys to be involved 150 times, the pancreas 93 times, the brain 72 times, and the female genital organs, muscles and intestinal tract each once.

Referring to the inflammatory processes, Castens found 1,671 instances of interstitial and 38 instances of gummatous inflammation, showing that interstitial inflammation is the typical pathologic change

in congenital syphilis. Particularly characteristic for the syphilitic processes of the new-born infant is the fact that the changes in the various tissues and organs proceed from the vascular degenerations. This is borne out by all of the histologic and statistical studies.

Symposium on Eugenics

ON SOME LAWS OF HEREDITY.*

W. E. CASTLE.
Professor of Zoology in Harvard University
CAMBRIDGE, MASS.

The nature of the individual man or woman is dependent upon two factors—hereditary endowment and environment. I shall confine my attention to the first of these, believing that it is of primary importance in its bearings on the subject before us.

THE MATERIAL BASIS OF HEREDITY.

By heredity we mean the fact that an individual resembles its ancestors. Such resemblance has its basis in the material out of which the individual is formed. But every new individual has its beginning in the union of two reproductive cells—an egg cell furnished by the mother and a sperm cell furnished by the father. Of the two, the egg is enormously larger, but its influence on the nature of the offspring is no greater. In heredity transmission the two parents share equally. This fact indicates that a large part of the egg consists of substance nonessential to heredity. Indeed, we have reason to believe that there is no relation whatever between the mass of the reproductive cell and its influence in heredity. Heredity perhaps consists chiefly, if not exclusively, in the transmission of enzyme-like materials which initiate certion metabolic processes in a suitable medium represented by the food materials of the egg. On this view the mass of the hereditary substance is of no consequence whatever, since it contributes nothing to the end-product, but only sets going certain chemical processes. The nature of the end-product will depend upon what processes are set going and in what order.

THE REPRODUCTIVE CELL SINGLE, THE INDIVIDUAL DOUBLE.

Regarding the reproductive cell as an assemblage of initiators or "determiners" of metabolic processes, we are led by several distinct lines of evidence to consider each such reproductive cell, whether egg or sperm, as containing in general a complete set of all the determiners necessary to form an individual of the species. If so, the ordinary individual contains two such sets, since it has been produced by the union

* The substance of an address delivered Jan. 27, 1909, at a joint meeting of the Physicians' Club of Chicago and the Chicago Medical Society.

of two different reproductive cells. From the standpoint of heredity, therefore, if we regard the reproductive cell as single, the individual is double. This conception of the individual as a duality receives the fullest confirmation from breeding experiments with animals and plants alike. In illustration of the point I will cite some experiments with small mammals.

MENDEL'S LAW OF HEREDITY.

If a pure-bred black guinea-pig is mated with a white one, the young produced are all black pigmented. This result seems to violate the principle previously stated, that the parents contribute equally in heredity; in reality, however, that principle is not violated. The white parent has contributed its own character to the offspring, but that contribution is unseen in them, simply because black hides it. For, if the cross-bred black individuals are now mated with each other, the white reappears among their offspring, one in four of which, on the average, is entirely white.

The exclusion of white in a first cross and its reappearance in the following generation accords fully with the principle of single reproductive cell, double individual. Each cross-bred individual received black (B) from one parent and white (W) from the other parent. These, in turn, it transmitted separately on attaining sexual maturity. Each cross-bred female produced eggs, half of which were B and half W in character. Likewise each cross-bred male produced sperms, half of which were B and half W in character. Now the chances would be equal that in fertilization a B sperm would meet a B egg or a W egg, both sorts of egg being numerically equal. By such unions individuals of a second generation would be produced, which would be in nature either BB or BW. But the W sperms on fertilizing eggs of the same two sorts would produce either BW or WW combinations. On the whole, therefore, we should expect three sorts of combinations to be produced, viz.: BB, BW and WW, and these in the numerical proportions 1BB:2BW:1WW, or three combinations containing B to one containing W alone. But since, as we have seen, when black is joined with white, it excludes white, there should be three black individuals to one white one, the proportions observed in the experiment. Further, of the three blacks, one (BB) should breed true, transmitting always B, while two (the BW individuals) should transmit to half their offspring B, to the other half W. Breeding tests of the black individuals show this also to hold good in actual experiments.

The foregoing case illustrates a simple but fundamental law of heredity, first discovered by an Austrian naturalist, Gregor Mendel, and called, in his honor, Mendel's law.

This law of "exclusive" or "alternative" inheritance, in which the excluded character skips a generation, reappearing in the second generation, when suitable matings are made, applies to color inheritance quite generally. Thus in crosses, black and yellow as a rule exclude the less

dense pigments, brown and yellow. In man the brunette type excludes the blonde, and brown eyes exclude blue ones.

But the workings of this law are not restricted to color characters. Hair-length and texture are likewise Mendelian characters in heredity. Long or "Angora" hair in guinea-pigs and rabbits is a character excluded by short or normal hair. In man curly hair is dominant over straight hair. In guinea-pigs an abnormal arrangement of the hair in rosettes is dominant over normal coat, just as in birds abnormal arrangement of the feathers in crests, ruffs and frizzles is dominant over normal arrangement.

Further, the Mendelian characters are not restricted to superficial or skin characters. In man a two-jointed condition of the fingers has been found to be dominant over the normal or three-jointed condition, the abnormality in this case being associated with shortening of certain other parts of the skeleton. This case is the more remarkable because skeletal characters in general seem to be non-Mendelian in heredity. Color blindness, left-handedness and other peculiarities due to abnormal structure of the nervous system follow the law of Mendelian inheritance, as do also numerous pathological conditions, such as hemophilia, known to "skip a generation" or appear sporadically in families.

PRODUCTION OF NEW VARIETIES.

It is a singular and important fact that in general one Mendelian character is independent in heredity of every other such character. Thus the length of the hair has no relation to its whiteness or blackness, and its roughness or smoothness has no relation to either its length or its color. This fact makes it possible by means of suitable matings to obtain any desired combination of Mendelian characters and to fix such combinations as racial characters. An illustration will help to make the matter clear.

If a long-haired black rabbit is mated with a short-haired white one, the young will all be short-haired and colored, manifesting the two dominant characters, color derived from one parent and shortness of hair derived from the other. The alternative characters, whiteness and length of hair, are excluded in this generation, but reappear in the next, when four sorts of young are produced, viz.:

1. Long-haired and colored, like one grandparent.
2. Short-haired and white, like the other grandparent.
3. Short-haired and colored, like the parents.
4. Long-haired and white, a wholly new combination.

These four classes are produced, on the average, in the proportions 3:3:9:1, and in each such group of 16 individuals one individual in each of the four classes on the average breeds true.

In general, we may say that if the parents differ in more than a single Mendelian character, then new combinations of such characters will occur among the children or grandchildren (especially the latter) and fixed races possessing the new combinations may be obtained at will. If the parents differ in two characters only, two new combinations of

those characters may be obtained; if the parents differ in three Mendelian characters, six new combinations may be obtained, and if in four characters then fourteen new combinations are possible. Thus it is a simple matter by cross-breeding to produce new varieties of animals or plants which represent new combinations of Mendelian characters. The whole process of producing and fixing such varieties may be completed in two generations from the cross.

To explain the mutual independence of different Mendelian characters, we have only to suppose that each has its basis in a different material body within the reproductive cell.

SEX A MENDELIAN CHARACTER.

It is becoming daily clearer that sex itself is a matter controlled by Mendelian inheritance, and that accordingly the observed approximate equality of male and female births among the higher animals is a matter of mathematical necessity, no less than the drawing of equal numbers of black and white balls from an urn containing the two sorts in equal proportions. This view of sex inheritance is greatly strengthened by the recent discovery of several cases in which a particular Mendelian character is associated with one sex, but not with the other. In such cases we must suppose that the determinant of one sex has in some way become attached to the material basis of the Mendelian character in question, so that one is not inherited without the other.

HIDDEN FACTORS, ATAVISM, AND THE ORIGIN OF VARIETIES BY LOSS OF FACTORS.

In certain Mendelian cases two or more independent factors must be present together to produce a single visible effect. The presence of neither factor may be suspected until the other is introduced. Thus it is known that a cross of two white-flowered plants may sometimes produce offspring bearing colored flowers, each white race having contributed a different factor necessary for color production. In this category of cases may be included well-known instances of atavism, the reappearance of ancestral characters as a result of crosses. Thus wild, colored, gray rabbits are produced by crossing black with yellow ones. The yellow parent in this case contributes an unnoticed pattern which converts black into gray. Through this line of discovery the origin of the various color varieties of our domesticated animals has become an intelligible process. The aboriginal or wild coloration is in general complex, and the colors and color patterns characteristic of domesticated varieties have arisen, for the most part, by loss of one or more of the independent Mendelian factors which cooperate in the production of the wild coloration. Thus the gray coat characteristic of wild rabbits (the familiar "cotton-tail" type of coloration) results from the joint action of some eight different Mendelian factors. Black rabbits lack only one of these factors, yellow rabbits lack another, and white ones still another, while blue rabbits and cream-colored ones lack two factors each. Any cross of color varieties which will bring together in one individual

all the several factors found in a gray rabbit will, of course, produce a gray rabbit by "reversion," that is, by a process of synthesis. In this way it has been found possible to produce and fix wild-colored varieties of rabbits and guinea-pigs, using only the simpler color varieties found in domestication.

THE LAW OF BLENDING INHERITANCE.

But not all heritable characters conform with the law of Mendelian or alternative inheritance; another important class of cases is governed by what we may call the law of blending inheritance. This is well illustrated in a cross between races of rabbits which differ in ear length. The offspring in such cases, when full grown, have ears which approximate closely the mean of the ear lengths of the respective parents. In a case in which the ear lengths of the parents were 8 inches and 4 inches, respectively, the ear length of the offspring was approximately 6 inches, which same condition was regularly transmitted by them to a second generation of offspring. In a back-cross also of the rabbits having 6-inch ears with the long-eared ancestor, offspring with intermediate ear lengths were again produced; in this case the ears were approximately 7 inches in length. In a back-cross of the same lot of (6-inch) rabbits with the short-eared ancestor, offspring with ears of intermediate ear length were again obtained; in this case the ear length was approximately 5 inches, the mean of 6 and 4.

The linear dimensions of the skeletal parts of rabbits follow the same law of blending inheritance. In consequence the offspring have both skeletal dimensions and skeletal proportions which approximate closely the mean of the corresponding parts in their respective parents.

As regards total body weight and the volume of the bones, the offspring in cases of blending inheritance fall below the arithmetic mean of the parents, as we should expect. For if we compare two spheres whose diameters are 2 and 4, respectively, with a third sphere whose diameter is 3, we shall find that the volume of the third is not the mean of the volumes of the other two, though such was the relation between their diameters. Rather the volumes will be as $2^3:3^3:4^3$ or as 8:27:64.

It seems clear that with the foregoing explanation body size conforms with the law of blending inheritance and further study should enable us to predict with a fair degree of accuracy the body size of individuals resulting from a particular mating. The practical value of such knowledge to the animal breeder is obvious. Already through a knowledge of the two laws of Mendelian and of blending inheritance he can predict fairly well what the character of the offspring will be in a considerable variety of particulars. A knowledge of hereditary processes is a first step toward controlling them.

INTERMEDIATE TYPES OF INHERITANCE.

Between fully alternative and fully blending inheritance we can recognize intermediate types, in which there is neither complete blending nor complete segregation of the contrasted characters brought to-

gether in a cross. Such, for example, is the case with polydactylism in the guinea-pig. A cross between an established polydactylous race (four-toed) and a normal one (three-toed) produces young sometimes with fairly well-developed extra toe, sometimes with very imperfect extra toe, and sometimes with no extra toe at all. The next generation shows a similar diversity of conditions. Extra toes are produced of all grades of development except the highest, both by individuals having extra toes and by those which lack the extra toe. In such cases it is evident that modification of the contrasted characters has taken place as a result of crossing, but this modification is less extensive than in blending inheritance.

It is plain that in such cases heredity units are concerned, but their behavior is not strictly Mendelian, i. e., accompanied by dominance and segregation. It seems probable that in blending inheritance also heredity units are involved, but their behavior is different, and the breeder will do well to treat them in a different way.

SUMMARY.

To sum up our conclusions, in all forms of inheritance alike, each parent makes, as regards every separately heritable character, a unit contribution to the offspring. Consequently the offspring are as regards every character twofold, or dual, organisms. When the offspring, in turn reproduce, they transmit the conditions which they received from their parents; they transmit those conditions separately in alternative inheritance, blended in blending inheritance, and partially separate, partially blended in other forms of inheritance.

APPLICATION.

Now, what applicability, we may inquire, have the principles which we have been discussing to the practice of animal breeding? Should they cause the breeder to modify his accustomed methods of procedure? Not materially in most cases, though occasionally improvement in method will be found possible.

Some breeders, in attempting to improve existing varieties of domesticated animals and plants, depend exclusively upon selection, others upon cross-breeding and selection combined. Both methods of procedure are warranted, but in different cases, by what we know concerning heredity. In the case of a blending character, which it is desired to improve, such, for example, as ear length, size or weight, what would be the advantage of cross-breeding, when every cross would bring about the permanent loss of half the improvement already gained? In such a case, selection of the best individuals in each generation without crossing out of the breed would be the only rational procedure in attempting further to improve the race. But if it were desired to combine a blending character, such as long ears in rabbits, with some character found in a different race of rabbits, then a cross between the two races would be necessary as a first step in the process, even if it resulted in impairment

of one or both characters desired. These characters would then need to be improved again, either by selection alone, or by further crossing with one parent form or the other, followed up by selection.

If the characters which it is desired to combine in one race conform with Mendel's law in heredity, the entire process of producing and fixing the new combination may be completed within two generations, but not all individuals of the second generation will breed true to the combinations of characters which they manifest. Here is where selection must come in to single out individuals which will breed true.

STUDIES OF INHERITANCE IN THE EVENING PRIMROSE.*

R. R. Gates, Ph.D.
University of Chicago.
CHICAGO.

It might appear that the botanist could not contribute directly to the solution of the problems of heredity in man. But since the processes of heredity show a wonderful uniformity, both in mechanism and results, throughout the plant and animal kingdoms, data derived from the study of variability and inheritance in plants may be applied to problems concerning man himself. While the special problems of eugenics resulting from man's civilization and social development are foreign to the plant breeder, yet, inasmuch as man is an organism, studies based on plants can contribute to an understanding of the phenomena of heredity in man equally with those based on animals.

Professor Hugo DeVries, of Amsterdam, Holland, was the first to make a prolonged study of the evening primrose. He found it growing wild near Amsterdam, where it had escaped from gardens. The species concerned is called *Oenothera lamarckiana,* and it showed a remarkable range of variability. Professor DeVries found that these plants continued to exhibit this wide range of variation, a number of types arising from the parent form and breeding fairly true to their particular type. When the seeds of *O. lamarckiana* were sown in quantity about 1 to 5 per cent. of the plants developing from them belonged to one of the new types.

This process DeVries called "mutation," and chiefly on his studies of the evening primroses, extending over many years, he founded his mutation theory of evolution, which may be very briefly stated as follows: This is the general method of species origin in Nature, new forms originating suddenly and breeding true from the start, these jumps or saltations replacing the slow and gradual Darwinian process of natural selection. Each of the new types presents a series of new unit characters which were not present in the parent species.

In order to explain the sudden origin of new unit characters, DeVries made an assumption which to many of us seems unjustified,

* Abstract of an address given before a joint meeting of the Physicians' Club of Chicago and the Chicago Medical Society, Jan. 27, 1909.

namely, that at some time in the previous history of the mutating species representatives of these new units had made their appearance in some mysterious manner in the germ plasm. My own studies of these plants have led me to the opinion that this assumption is wholly unnecessary and that the phenomena concerned may be more reasonably explained in another manner. I have gradually come to view this process of mutation as one of analysis in which each of the new types or mutants is lacking in some character or set of characters which the parent form possessed. This view places quite a different evolutionary value on these phenomena.

According to this view, all the mutants, with one exception to be explained later, are considered as originating through the loss of characters. Even in the case of *O. rubrinervis,* which DeVries cites as a progressive mutant, while there is no apparent loss of characters, experimental studies have also shown that there is no reason for assuming that anything new or additional has been acquired which was not present in *O. lamarckiana.*

In the case of *O. gigas,* another "progressive mutant" of DeVries', it is also believed to be a false conception to say that additional characters have suddenly appeared in its germ plasm, for this mutant differs from all the others I have studied in that it has double the number of chromosomes present in the parent form, *O. lamarckiana. Gigas* has lost no characters, but seems to have merely had a duplication of the chromosome set present in *O. lamarckiana.*

Several series of facts support my view that the mutants, with the exception of *O. gigas,* have arisen through a process of analysis, different sets of characters being lost from the germ cells giving rise to each mutant. The peculiar phenomena of hybridization among these forms are simply explained on this basis. When two mutants are crossed, the parent form, *O. lamarckiana,* appears in the first generation of hybrids, in addition to both the mutants. These two results—first, that the mutants themselves breed true when self-pollinated and never revert; second, that when crossed they produce the parental type, *O. lamarckiana,* at once, but never any type showing new synthetic characters—are both easily explained if we suppose that each of the mutants was lacking in a different set of characters which the parent possessed. This principle will also explain some of the well-known cases of reversion on crossing cited by Darwin and others.

The Mendelian type of inheritance described by Professor Castle appears also to be due to a process of analysis, and in many cases, as in mice and rabbits, coats of various colors seem to have arisen by the loss of different factors which were present in the ancestral form.

It is probable that certain cases in man, such as a predisposition to particular diseases, can best be explained as due to the loss of certain factors in the inheritance. This statement of a few of the facts of mutation in the evening primroses gives a glimpse of the general viewpoint growing out of these results. An entirely different line of work led me toward the same conclusion I have already stated to you, and, in

fact, furnishes a further basis for it. This is a study of the structure of the germ cells of these forms, to find out if there was any microscopic or cytologic basis in their nuclei for the sudden origin of these new types. These studies have shown that there is a basis for the sudden origin of the new types, in the behavior of the chromosomes in the germ cells at the time the latter are formed. Owing to this peculiar behavior, occasional irregularities occur in the pairing of the chromosomes at the time the germ cells are produced. The number of chromosomes remains constant, but certain germ cells will, nevertheless, be entirely deficient in a particular kind of chromosome. A germ cell lacking both members of a given type of chromosome (one derived from each parent) would be lacking in the ability to produce the corresponding set of characters. Thus we have a possible basis for the sudden appearance of apparently new sets of characters in the evening primroses, which are, however, believed to be due to the loss and not to the addition of anything.

This view of mutation as a process of analysis is equally valid whether it be based upon the chromosome distributions or considered entirely apart from these phenomena. It seems probable that much species-formation may have taken place in this manner by an analytical process in which certain factors are lost from the germ plasm of the parent species. But this evidently can not be the only evolutionary factor, for quite a different set of forces is necessary to account for the origin of new organs and for the steady progression in complexity which has taken place so many times in the evolution of the plant and animal kingdoms.

Another study in quantitative inheritance concerns the amount of red pigment present in the sepals of the flower buds of *Oenothera rubrinervis,* a mutant having red streaks on its sepals. The extent of this color pattern shows a wide range of variability, and in some cases at least the offspring of an individual show the same amount or extent of pigment as their parent form, i. e., they breed true to this purely quantitative difference. This shows that some initial difference in the germ cells determines their capacity for producing a certain amount or extent of pigment in the adult individual developed from them under given conditions.

Some recent work seems to indicate that the different coat colors of mammals are due to different stages of oxidation of a single melanin pigment. If this is the case, then Mendelian inheritance resolves itself into the inheritance of purely quantitative differences. Some quantitative factor of the germ cell determines that the oxidation of this pigment shall stop in the adult individual at different points in different cases, giving, for instance, a black mouse in one case and a yellow one in another.

A knowledge of the inheritance of purely quantitative differences is, therefore, more important than ever before, because many apparently qualitative differences may in the last analysis prove to be purely quantitative. A knowledge of the inheritance of quantitative differences in man would be valuable from the standpoint of eugenics.

LIGHT THROWN UPON EUGENICS BY THE EXPERIENCES OF ANIMAL BREEDING.*

E. DAVENPORT.
Dean of the College of Agriculture, University of Illinois.
URBANA.

The writer does not pose as an authority in eugenics, because his experience has been confined to the improvement of plants and animals. Whatever he may say, therefore, in the larger field will be subject to the risks we always run in reasoning from one species over into another in matters of hereditary behavior.

However, the principle is well established that in general all species, both plant and animal, obey the same general laws of descent, even though they differ in minor particulars. We are further encouraged in their application to man by reason of the fact that the exhaustive studies of Galton in the stature of English people, as shown in his famous regression table, constitutes a display of hereditary transmission with which all races substantially agree so far as heredity and variation have as yet been studied.

This table is here reproduced in full, reference to which will teach more facts of inheritance than will any similar and equal body of figures ever published.

In this table the statures of children as adults are compared with those of the parents from which they are descended, the heights of the children being noted along the top and those of the mid-parent[1] down the left. The three columns on the right give the number of adult children descended from parents of different heights (Column 16), the mean or average height of each lot (Column 18) and the number of families represented in each (Column 17). From this table some exceedingly important deductions can be made, particularly as it seems to afford a typical picture of how heredity works, whatever the race or the character in question. As we study this, therefore, we may substitute any character of any animal, as speed in horses, or any other character in man, as, for example, moral character, musical ability or sense, physical defect or criminal tendencies.

1. Parents of all sorts, whether tall or short, good or bad, produce some offspring better than themselves (as taller), some that are worse (as shorter), but a larger number not far from the standing of the parent.

2. If the parent is above the average of his race, his offspring will average high, but many individuals will be near the lower limits of the race (see, for example, row e in table).

3. The exceptional individual may arise either from the exceptional parent (see row c) or from the mediocre parent (see row f).

---

* Read before joint meeting of the Physicians' Club of Chicago and the Chicago Medical Society, Jan. 27, 1909.

1. By mid-parent is meant the average height of the father and mother after increasing the mother's height by 1.08 because women are on the average 12.5 per cent. shorter than men. All female heights in the table are in the same way transmuted into male.

NUMBER OF CHILDREN OF VARIOUS STATURES BORN OF 205 MID-PARENTS OF VARIOUS STATURES*

	1 Heights of Mid-parents.	Heights of Adult Children.														16 Number of Adult Children.	17 Number of Mid-Parents.	18 Means of Children.
		2	3	4	5	6	7	8	9	10	11	12	13	14	15			
a.	.....	Below..	62.2	63.2	64.2	65.2	66.2	67.2	68.2	69.2	70.2	71.2	72.2	73.2	Above.	.....	†	
b.	Above.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3	.....	4	5	72.95
c.	72.5.....	.....	.....	.....	.....	.....	.....	.....	1	2	1	2	7	2	4	19	6	71.4
d.	71.5.....	.....	.....	.....	.....	1	3	4	3	5	10	4	9	2	2	43	11	69.9
e.	70.5.....	1	.....	1	.....	1	1	3	12	18	14	7	4	3	3	68	22	69 5
f.	69.5.....	.....	.....	1	16	4	17	27	20	33	25	20	11	4	5	183	41	68.6
g.	68.5.....	1	.....	7	11	16	25	31	34	48	21	18	4	3	.....	219	49	68.0+
h.	67.5.....	.....	3	5	14	15	36	38	28	38	19	11	4	.....	.....	211	33	67.6
i.	66.5.....	.....	3	3	5	2	17	17	14	13	4	.....	.....	.....	.....	78	20	67.1
k.	65.5.....	1	.....	9	5	7	11	11	7	7	5	2	1	.....	.....	66	12	66.8
l.	64.5.....	1	1	4	4	1	5	5	.....	2	.....	.....	.....	.....	.....	23	5	65.5
m.	Below.....	1	.....	2	4	1	2	2	1	1	.....	.....	.....	.....	.....	14	1	65.6
n.	Totals.....	5	7	32	59	48	117	138	120	167	99	64	41	17	14	928	205	
o.	Means‡.....	.....	66 6	66.8	67.8	67.8	67.7	67.9	68.3	68.5	69	69.1	70.2	70.2	.....	68.08§	68.68§	

* Galton, Natural Inheritance, p. 208.

† Error. Manifestly four children could not have five mid-parents (See author's footnote.).

‡ Row o shows the mean heights of the mid-parents producing the children of the corresponding column. For example, 67.8 (column 6) is the average height of parents producing 65.2-inch children.

§ Excluding everything above 72.5 and below 64.5 in mid-parents, and everything above 73.2 and below 62.2 in offspring. If these values are included at the next measurement to the last given, the means become 68.1 and 68.7 respectively.

4. More exceptional individuals arise from mediocre parents than from exceptional parents, but it is because the number of mediocre families is high (41) as compared with the exceptional (6).

5. The proportion of exceptional individuals is vastly higher from exceptional parents than from mediocre parents.

6. Whatever the parentage, there will always be a portion of the race that is decidedly inferior in respect to any given character.

When these facts are taken into consideration, together with the known facts that characters are seldom perfectly correlated, we arrive at the conclusion that with exceptional parents some of the offspring will be exceptional individuals, but also that, whatever the parentage, many individuals will be inferior in respect to many or even all essential characters, and are known as degenerates. We infer from all this that the offspring of superior people will likely, but not necessarily, be superior; that the offspring of degenerates will mostly be inferior, and that the offspring of mediocrity will, on the whole, be mediocre, with some exceptional and a few degenerates.

Now, animal breeding aims at two distinctly different objects, arrived at by almost opposite methods:

1. The promotion of a few exceptional individuals, like race horses, prize animals and fancy stock generally.

2. The raising of the general average of the breed without reference to exceptional preferences, as with feeding cattle, for example.

In the first case only exceptional individuals are used for breeding purposes. Even then, as we would infer from the table, only a portion of the offspring is exceptional, but of that portion *a few will be even better than their exceptional parents* (see the table where we have offspring taller than any parents). This is progression and accounts for the two-minute trotter and the thousand-pound cow—records that can be attained by but one in every million.

Some of the advocates of eugenics would imitate this procedure with humans, if possible, not realizing, I am convinced, that we secure the same results in good degree in every-day life through preferential mating. Men and women do not, as is popularly supposed, "choose opposites." On the contrary, their choice results in a correlation of about 0.28; that is, to this extent tall people tend to marry tall, short tend to marry short, musical tend to marry musical, good tend to marry good, and bad tend to mate with bad, a result due, in part, to preference and, in part, to association. To about this extent, therefore, we secure in humans the same results as in animals and by the same methods.

To go beyond this natural result of preferential mating, we should be obliged to apply to our marriage laws of the best people such restrictions as would dangerously interfere with the deepest human instincts, in which attempts we should either fail or else we should blot out of the race its choicest asset and most valuable character—love.

Now, it is not necessary to resort to the extreme selection practiced in animal breeding in order to secure substantial results. This is for two reasons: first, the one of preferential mating just mentioned; the

other is that, as we have already seen, *exceptional individuals arise in large numbers from mediocre parents.* It is upon this principle that democracy rests when it declares that it is safer to elect rulers from the masses, thus choosing the exceptional man, than it is to accept hereditary rule, with the certainty that now and then the monarch will be a degenerate, no matter what the family.

This brings us to the imitation of the second practice in animal breeding—the raising of the mass without reference to exceptional individuals of whom we are likely to have sufficient by forces already at work. In this method we resort in practice to breeding from the few rather than from the many, but for purely economic reasons and to gain time; that is, in mass improvement we get the same results by breeding from a restricted number of the better individuals or by excluding the lower limits of the race, except that the more we exclude the faster we progress. For economic reasons the animal breeder excludes the greater share because he desires to have as few as possible below the medium. Evidently we can not do this with humans without an amount of interference that is undesirable, but we can accomplish the same results in a little longer time by absolute exclusion of the degenerate, or, as we say with animals, the skalawag or the cull.

This will call for some changes in our dealings with the criminal, which are too antiquated for an enlightened civilization. Our laws decree that if a man does certain acts he shall be taken away from his family and shut up for a longer or shorter time where all his associations shall be with criminals, but upon release we let him loose with unrestricted freedom. If he be a degenerate, that is, a born criminal, he will shortly be back in prison where he may spend half his life and yet get more children than half a dozen normal men. If he is not a degenerate, he "reforms," but we have damned his name and his descendants for generations, all to no purpose.

All experience in breeding indicates that the reason and purpose for the restraint of the criminal is not reform, but the safety of the public against his depredations now and the reproduction of his kind hereafter. The question for the courts to determine is, therefore, whether the man is by heredity a criminal, and, if so, then he should be separated from society, not temporarily, but, like the dangerously insane, forever, because, like the leopard, he will not change his spots, because he can not.

When this once comes to be followed, then the race will rapidly rise and we shall reduce, though we never shall be able to obliterate, the degenerate. When that time comes we shall have fewer in our prisons and we shall cease making criminals out of normal average men by reason of enforced evil associations and lost hope.

This, in my opinion, is about all we can do in the way of "breeding" the human animal, and it is more than most people realize, for if we segregate and prevent the reproduction of the degenerate, on the one hand, and depend upon the educated preferential mating, upon the other, the human race should rapidly and indefinitely improve.

To conclude, I can not approve the oft-proposed interference with the marriage relations of normal people. Any mistakes they make will be blotted out mechanically and will not permanently weaken the race or greatly hamper it at any given moment. But I would deal differently with the criminal class and take every opportunity to eliminate them from the possibility of reproducing their kind when once adjudged to be degenerates. In other words, I would not tamper with the normal men and women in their marriage relations, but I would deal differently with our degenerates by inquiring more sharply into the real nature of the criminal, and I would adjudge him upon that nature as determined upon evidence before a competent court rather than to judge him by a single act which may or may not indicate his hereditary nature. In a word, I would begin the improvement of the human race by the elimination of the degenerate in every way possible through the action of our criminal court, and that, in my opinion, is about as far as we shall ever get in eugenics—at least without sacrificing more than we can hope to gain.

DISCUSSION.

Dr. Charles L. Mix:—I think we, all of us, both individually and collectively, are to be congratulated on the fact that we have been able to hear so much in one short evening bearing upon the general subject of heredity. By heredity I think we understand merely a general principle. It is really a word which expresses a genetic relationship between successive generations of animals. Heredity in itself is not a theory; it is merely a word used to express a relationship. A word which we are more particularly interested in as physicians is inheritance.

At the very beginning of our life as a fertilized ovum, our inheritance or heritage and our organism are identical structures. Of course, as soon as cell-division takes place, our heritage is divided among all of the cells of our organism as it develops. Now, in this first cell there are what have been spoken of to-night by Professor Gates, a large number of chromosomes. The number of chromosomes, as he stated, in any given species, is the same for the whole group of animals in that species. In man the number of chromosomes, as well as somatic cells and germ-cells, is always twenty-four. It seems to me that the Weissmann theory of heredity, the theory by which the germ-cell is supposed to contain the particulate units which make up our character is the right one; and, as Dr. Gates has said, in the twenty-four chromosomes are embodied most of these particulate units of character. It is perfectly evident that when the twelve chromosomes of the sperm unite with the twelve chromosomes of the ovum, we can get all kinds of mixtures. If we figure up by the laws of algebra the number of chances by the unions of twelve different sets of chromosomes, with twelve other different sets of chromosomes, the number of possible combinations runs up into the millions. That easily explains to us why there is a steadfast tendency towards variation among individuals. It could hardly be otherwise, and we can easily see that if we have a predominance of some particulate characteristics in some individuals we will have the dominant characteristics appearing in their offspring.

Dr. Gates spoke on the œnothera Lamarckiana. He did not say what he might have said, that in this particular plant De Vries found an opportunity which he had long before sought, without any possibility of gratification. He did not tell you that this Dutch professor, living near Amsterdam, had examined over a hundred plants before he finally came upon one which was in a state of mutability, and this one particular plant he found in a potato field. He found two species in the process of evolution. He found the original parent form. He found also an elementary species which he named the œnothera brevistylis, because of the short style which it possessed, and another form œnothera lævifolia, so named

because the leaves were smooth. He had found a beautiful example of what was long before called by Geoffrey St. Hilaire saltatory evolution, or evolution by leaps and bounds in contradistinction to the gradual process of evolution by fluctuation or varieties, which is the theory of evolution as we find it in Darwin.

You know, there is another theory of evolution called Lamarckianism, which is simply in a general way what is called in German *anatomische und physiologische Anpassung*.. It is the adaptation of the individual to a particular environment or to a particular function. This last theory presupposes the possibility of the inheritance of acquired variations. It is something which personally I do not believe in. I do not think there is any chance for the inheritance of an acquired variation. The inheritance or heritage which we have must be innate, and lies, so far as can be told, in these chromosomes themselves. Can these chromosomes in any way be influenced? They can be influenced, as we know in the case of these evening primroses. The œnothera Lamarckiana was practically a weed in that garden. A weed is nothing but a plant which under a new environment breeds with remarkable intensity, of which it is incapable under its old environment. This plant, which originated in America, was found growing in Holland practically in the form of a weed, in a conditon of great mutablity, and ready for all sorts of changes, and several elementary species, seven or eight in number, were evolved from this particular plant and found to breed true.

I wish now to change my subject somewhat abruptly. There are two varieties of wheat, as regards immunity to rust. There is a variety of wheat which is immune to rust, and there is a variety which is not so immune. If you cross these two varieties the dominant characteristic is found to be a lack of such immunity, so that the seeds formed of the union of these two forms show usually the dominant characteristic, a susceptibility to rust, with a recessive characteristic, an immunity to rust. This recessive characteristic comes out in these seeds in the proportion of one to three, and if the recessive characteristic is bred true, one can easily perpetuate the seed of the variety of wheat which is perfectly immune to rust.

Is there any possibility by which in the case of the human race immunities can be taken advantage of when they exist in chromosomes? I do not believe that there is any possibility of creating these things. When they occur, they occur usually as spots, that is, freaks, which are properly taken advantage of by the breeder. We readily believe, of course, in the survival of the fittest, but we have no means of telling how to bring about the arrival of the fittest. If we could do that we would have the whole problem easily solved. But that is impossible. It is not, however, a chimerical dream to hope the time may come when we may find that there are some particular breeds of the human race that will be discovered to be immune to certain diseases. It will be hard to make this discovery; it may be a dominant, or it may be a recessive characteristic. It is questionable whether we will be able to breed it, whether there will be any opportunity offered by which it can be done. Yet it is being done, I think, almost without our knowledge. Let us take the statistics of measles and its mortality. The mortality from measles, according to statistics taken from England for two hundred years back, shows conclusively to us as physicians that the disease at the present time is far milder than it formerly was. Is it not probable that during the course of these two hundred years there has been brought about some change in the germ-plasma, perhaps by a sudden or saltatory variation, by which immunity has been in part acquired by some particular strain, which has then permeated the whole mass of English inhabitants? Is it not likely, also, that the same thing is true with regard to the disease called syphilis? Those of us who are familiar with the history of the disease know that it was, at its origin, an extremely fatal malady. I am somewhat of the opinion, from what I have read in regard to this disease, that it was brought into Europe from America. It is stated that the skulls of some of the aboriginal South American races show cranial syphilis. A thought which occurs to us is whether or not this disease,

which appeared in Europe at the time of the return of Columbus and was prevalent among the Spanish sailors, has not been attenuated during the course of the three or four hundred years following. All of us are familiar with the old pun, that "The human race is becoming more syphilized as well as more civilized." I think that this is probably more than a pun; it is an explanation of a real fact, and I think the reason for the existence of the fact, as I conceive it to be, is the appearance of a strain of the human race which to some extent is immune to this disease. This strain of diminished susceptibility or of immunity has in time spread through large numbers of the human race, so that the lessened susceptibility of the individual of to-day can be explained to some extent by the history of the past.

The law of Galton in regard to ancestral relationship has been referred to to-night by Dr. Davenport, when he said that 95 per cent. of Mr. Jones would be bad if his great-great-grand-parents were bad. It is a fact, which can be worked out with mathematical precision, that the offspring of two parents contains one-half of the characteristics of the parents, one-fourh the characeristics of the grand-parents, one-eighth the characteristics of the great-grand-parents, one-sixteenth of the great-great-grand-parents, and so on, back. In fact, if we want to make a proper estimate of a given individual, all we have to do is to examine his parents, his grand-parents and his great-great-grand-parents, and we will be able to arrive at a fairly good estimate of his present status.

There are other questions which I hesitate to say much, if anything, about. One question, which is interesting to me, is the law of heredity as influenced by sex. We are all familiar with the general law of heredity which appears in hemophilia. The mother seldom shows hemophilia. The sons do. The daughters' sons do not. The grandsons of the daughters do, and hemophilia comes out in the male in alternate generations. Why this is I do not know. I know that there are cases of "hereditary optic atrophy" which show this law of inheritance, and this law has been worked out in a large number of nervous diseases. What is inheritable is the defective germ plasma, which probably is defective in the same proportion as all the somatic cells of the body are defective, and this germ plasma being defective, it is not a strange thing that nervous tissue, the most highly organized, and therefore the most prone to degenerate, should be the first tissue of the body to show degenerative changes. It is not strange that there should be such conditions as Friedreich's hereditary ataxia, showing the law of inheritance as modified by sex. It is not strange that the offspring of parents, who are guilty of indiscretions in the use of alcohol, should show changes in the nervous system, such as epilepsy and insanity, because it is likely that at the time of mating of these parents there was a marked defect in the general nutrition of the germ plasma. It is not, then, in these instances an inheritance of a specific disease which we have, but it is the inheritance of a disease tendency.

As to the question of predisposition, heredity and immunity, I am of the opinion that immunity can not be inherited. I regard immunity as an acquired characteristic. Smallpox does not confer immunity. Your father had it; you will get it if you have not been vaccinated, and are exposed to it. His acquired immunity does not do you any good. And the converse is true. If we can not have immunity inherited, how can we have predisposition inherited? We talk about inheriting a predisposition to tuberculosis. I am absolutely of the opinion that there is no such thing possible. What we do inherit in this case is a tendency towards degeneration, or a tendency towards disease, and we will get *that* disease to which we are most exposed. One hundred years ago it was smallpox that might have been thought to be inherited; to-day it is tuberculosis. It is not a question of the inheritance of a specific disease; it is a predisposition toward disease in general, the inheritance of bad germ plasma and of a poor lot of chromosomes. If we pay more attention to our eugenics, our eugenics will take care of themselves.

CLINICAL REPORT OF THE REAPPEARANCE OF THE ONCE COMMON AND FATAL MILK SICKNESS OR "MILK-SICK," WITH SUCCESSFUL RATIONAL TREATMENT DEDUCTED FROM CLINICAL FINDINGS.

W. E. WALSH, M.D.
MORRIS, ILL.

When the early settlers came into Ohio, Indiana and Illinois, there were many deaths among the cattle and people along certain creek and river bottoms from a disease called "milk sickness." As the timber land was cleared off the disease gradually disappeared, and is now only found in dry seasons in certain shaded places along certain creek bottoms, the localities in this section being very definitely fixed by the past history. The disease was so prevalent in early times that the settlers would run the cattle and heat them up before killing them for beef, to see if they would develop the symptoms called trembles, because often the cattle would show no symptoms of being sick until they had been stirred up and heated by vigorous exercise; then they would gradually lag, become shaky and tremble, fall down comatose and generally died. If the attack was severe, the animal would go into the deep shade and would act delirious and would very often attack anything that disturbed it. Milk cows seldom showed any symptoms, but their milk would infect hogs, dogs and people who drank it. Sucking calves invariably died, while their mothers with the sickness would live. Horses seldom died. People are usually infected through eating the butter or drinking the milk, rarely through eating cheese or the meat from the infected animal. In the last six years we have had over twenty cases, with three deaths. The infections came from two small areas of ground, one about forty acres and the other less.

REPORT OF CASES IN LAST INFECTION.

CASE 1.—Nov. 20, 1908, at 4 p. m., was called to see a boy, 4 years old, that had been sick with vomiting and in a partial stupor since morning. The first thing noticed was the peculiar sweetish odor in the room, such as is often found when a patient is seriously sick with diabetes. The child laid limp in bed, hollow-eyed, the pupils dilated, face shrunken, extremities cold, temperature 97, pulse 108 with good quality. It was very difficult to arouse the child and make it drink water. The history was that the child had not passed large quantities of urine and had not been thirsty, nor had it had excessive appetite, except the day before, when it had eaten almost excessively for dinner. The child went to bed apparently well and had started to vomit about 4 o'clock in the morning. The mother had given castor oil with no results and stated that the child had passed very little urine.

On inquiry it was found that other members of the family had been sick. The father, 50 years of age, had been ill for a week, commencing with sickness at the stomach, but no vomiting, also a girl 18 years of age, had been sick a week ago with vomiting and was still weak and tired, especially in the legs. Slight sweetish odor was found in the breath of both the father and the girl, and after it was found that they had obtained their butter from a family whose cows grazed in a pasture where milk-sickness had been among the cattle two years before and also that members of the family from which they purchased their butter had been similarly sick, a diagnosis of milk-sickness was given.

Large doses of castor oil were given the boy and his colon was flushed every two hours with normal salt solution. This was continued until the next morning, when there was a very free evacuation of offensive fecal matter with mucus. Colon flushing was reduced to three times a day and saline given. The urine was examined and found to contain no albumin, but gave a reaction for diacetic acid. The boy continued in this condition for four days, when he seemed, all of a sudden, to awaken and get interested in his surroundings. His temperature was continually subnormal, except on the fourth day of his illness it was 99 2/5 under the arm. The sweetish odor disappeared from his breath in about one week and for four weeks more he was apparently well. About this time he both ate and exercised freely, after which he was taken down with the same sweetish odor, subnormal temperature, prostration, constipation, thirst and vomiting. Bicarbonate of soda was given freely and the boy made a very rapid recovery and and has since been well.

CASE 2.—On November 8 a child in the same family, 8 years of age, had a slight vomiting, weakness of the knees, pains in the legs, headache and prostration, but had been given a free catharsis by the mother, and physician was not called. The patient was better in four days and went to school and continued at school for about two weeks, and on November 25 she had a ravenous appetite for dinner. She went to school and became heated playing at recess; she stated that she could hardly get up stairs in school, as her knees were weak and she had a headache. The child vomited every hour during the night until 4 o'clock in the morning, when she told her mother goodnight and told her to go to bed. The mother attempted to arouse her at 6, but could not and the gravity of the case was not recognized until 8, when we were first called, and found the child deeply comatose, the same symptoms as the boy, only more pronounced. The pupils were widely dilated, extremities cold and labored breathing, pulse 116, with fair quality, temperature taken in the rectum 97, unable to swallow without strangulation, breath strongly sweetish. Colon flushing and abdominal massage were resorted to, but to no result. Small doses of adrenalin and strychnin were given. The child died at 12 o'clock, apparently of respiratory failure. Pupils were firmly contracted during the last hour.

CASE 3.—Two days after the death of Case 2, the mother took down violently sick with vomiting and great prostration, pains in the stomach, constipation, headache, subnormal temperature and fast pulse. Following the treatment of diabetic coma, dram doses of bicarbonate of soda were given every hour or immediately after vomiting. Ounce doses of castor oil were also given, but usually ejected. An enema containing four ounces of bicarbonate of soda were given. After about the sixth dose of soda she stated that she felt better, "as if a load had been lifted off her," as she expressed it. She continued better. Urine obtained about twelve hours after this treatment commenced was still highly acid and gave the reaction for diacetic acid and had the odor of acetone. The acetone disappeared from the mother's breath in about three days. Mother continues well.

CASE 4.—During all this time the father continued to go about with the odor of acetone in his breath. He had no albumin in the urine, but asserted that he lost flesh rapidly. His appetite was good at times, and was the only thing that relieved the craving pain in his stomach. These pains were along the border of the ribs. He had pains in the limbs and great weakness upon attempting to go upstairs. Strychnin 1/30 was given every six hours. His condition seemed to be the same from day to day, and the attack lasted for about four weeks, with apparent recovery. Acetone and diacetic acid were found in his urine during the attack. He is still debilitated.

CASE 5.—A girl of 18 was taken sick with vomiting, pain in the bowels and weakness of the legs, but recovered in about three days with no special treatment except a free catharsis. She continued at work and had slight relapse in two weeks, but still is in very poor health and constipated. Soda was given at intervals.

CASE 6.—A young man, aged 17, living in the country where the butter came from, had been very tired and weak while husking corn. He had some medical attention, but no diagnosis was made until after the above cases developed, when he became quiet, stayed around the house and practically took treatment for five weeks, in which time he had gained back his flesh and felt good and started in vigorously to husk corn. He husked all day, felt tired at night and the next morning commenced to vomit. When seen, had a sweetish breath, a subnormal temperature, vomiting, pains in the abdomen, restlessness and thirst and constipation the same as in other cases. Bicarbonate of soda was given in large doses and the man recovered in about four days.

CASE 7.—The father of Case 6 had been ill for about four weeks. He had slight sweetish odor to his breath and had acetone in the urine. He was weak, but had never vomited. He had pains in the limbs and back, more particularly along the border of the ribs. He was haggard looking and had lost weight. At present report is still feeling poorly.

Six years ago we had another epidemic with two deaths, both dying of coma immediately after taking exercise. The hired man where the infection was had apparently recovered completely and walked four miles to town to see the doctor, came home and died the next day. His employer became much agitated and looked after the details of the funeral. He took sick and also died three days afterward. A postmortem, in association with Dr. Sippy, of Rush Medical College, found all the organs to be fatty, and a bacillus, resembling colon bacillus, was found by him in all the organs and in the blood. Guinea-pigs and rabbits were injected with the blood with no results. Portions of the muscle of the leg were fed to a dog. The dog was unfortunately used in a laboratory experiment by mistake before it had time to develop symptoms.

A postmortem was also held on the body of Case 2, with Dr. Harris, of the University of Chicago, who, with Professor Jordan, has made an extensive study of milk sickness. Specimens and cultures from all the organs were taken, including the brain. The same pathologic findings as above were found, and it was noticed that there was an enlargement of the lymphatic glands of the mesentery and swelling of Peyer's patches. There was a large quantity of mucus in the upper part of the small intestine. Drs. Jordan and Harris have since reported that they have the organism, which is an anaërobic, spore-forming bacillus resembling tetanus. They named it tentatively *Bacillus lacti morbi*. This bacillus is supposed to exist in small areas of soil in shaded portions of creek bottoms. The mode of infection from the ground to the cattle has not been definitely fixed. Whether from the dust or scourings of worms or from the ingestion of an infected insect it is not known. The clinical appearance of a case, when severe, resembles somewhat diabetic coma, and it was with this suspicion that the diacetic acid was looked for in the urine, and the treatment for the acidosis suggested alkaline treatment with bicarbonate of soda.

POINTS BROUGHT OUT IN THIS LAST EPIDEMIC.

First, that a patient might be slightly sick and recover apparently completely and yet, from the effects of violent exercise or overeating could relapse and die in coma, especially following violent exercise.

Second, the length of time from the first attack till complete recovery takes place is not known, but must be over six weeks in some cases. It is not known whether it is a reattack or whether the production of the organism is favored when the demand for oxygen exceeds the natural supply, as in overeating or violent exercise.

Third, the presence of acetone in the breath and diacetic acid in the urine indicate pushing bicarbonate of soda or some alkaline.

Fourth, that albumin was only found in the urine in the cases of those seriously sick. Former records state it existed in all cases.

Fifth, that the probable cause of the new outbreaks is the loss of fear for the infected district on account of cattle not being infected during the wet seasons, which is the rule, dry seasons being the exception in this section.

THE SANATORIUM—ITS INFLUENCE AND VALUE.*

J. W. Pettit, M.D.
OTTAWA, ILL.

In the discussion of this topic we may take it for granted that the state should make provision for its tuberculous poor; this not only as an act of humanity, but for its own safety. Four years ago when an attempt was made to secure a state sanatorium I was an enthusiastic supporter of that measure. In view of subsequent developments and an opportunity to study the situation more thoroughly, I now doubt, for the present at least, the wisdom of this plan. By accepting the state as the unit of representation adequate provision will not be made. Such a plan concentrates the responsibility where it will not be felt and has a tendency to the establishment of unwieldy and unnecessarily expensive institutions.

State sanatoria have largely failed in their mission in several states because of a too lavish expenditure of money, the failure to secure suitable cases for treatment, and the introduction of partisan politics in their management. Massachusetts was the first state to provide a public sanatorium in this country. Thousands of dollars were expended in the construction of massive buildings which are not only unnecessary but tend to defeat the object in view. For a few years and while under the control of the able and enthusiastic direction of the men who had influenced its establishment, the work done was very creditable. Within the past few years, however, it has come under the baneful and blighting influence of partisan politics and is now controlled by influences which threaten its future usefulness. In New York selfish political interests have been a blight upon the sanatorium of that state from its very inception. It is badly located, illogically constructed, expensively conducted, and the management is in such a turmoil of discord that its usefulness, to say the least, is seriously impaired.

---

*Read at the Annual Meeting of the Illinois State Medical Society, May 19, 20, 21, 1908.

With such examples as these before us will it not be wise for us to hesitate to commit ourselves to such a plan, especially in this state where our charitable institutions have for many years been dominated by spoils politicians and are not yet sufficiently removed from these influences to warrant the establishment of a new institution which may also become a football of politics?

A visit to the leading sanatoria in this country will convince the most casual observer that any attempt to carry out the treatment according to the standards set by the institutions to which we naturally look for guidance must fail, because of the enormous expense attending their construction and maintenance. For example, four of the leading charitable institutions in this country have cost approximately $1,250,000 and accommodate about 500 patients or less. This is a per capita cost for equipment alone of about $2,750, which is expended for housing a class of patients who should not be permitted to live in a house except of the simplest construction, and certainly should not sleep between massive walls no matter how constructed. This irrational method grows out of the fact that the medical men who are supposed to have directed and controlled their construction and management have practically nothing to say, and the physicians in charge are quite as much opposed to this extravagant and unscientific method as those who are in a more independent position to criticize. These institutions are for the most part simply an expression of the vanity of the rich and should not be accepted as models for our imitation. This is extremely unfortunate, and especially just at the present time when the demand for these institutions is so great that there is danger of the whole system being broken down by this unnecessary expense. It may be said with some appearance of reason that it is nobody's business if certain rich men desire to give expression of their vanity by building expensive sanatoria, but it certainly does concern the general public when it is attempted to follow their example in the construction of institutions which must be built at public expense or by numerous private subscriptions. As an illustration of the slavish adherence to the expensive and unscientific method which it is my purpose to condemn I call attention to the fact that the city of New York has decided to build a sanatorium for charity patients costing $2,000,000 which will accommodate only 800 patients. Two millions of dollars properly expended should be made to accommodate eight times 800 patients, and to the decided advantage of the patients themselves. When we look over the field and see the lavish use of money expended in the name of sweet charity providing accommodations that even the well-to-do could not afford if these institutions were conducted as business enterprises, is it not enough to cause us to look about for other and more rational methods?

The building of these expensive sanatoria has had a very discouraging influence upon those who are seeking to make provision for this class of invalids. State commissions appointed to investigate conditions necessary to the establishment of these institutions are discouraged when they find that from $1,500 to $6,000 per capita has been expended in existing

sanatoria—an expenditure which they are led to believe is demanded. In a neighboring state the commission appointed to investigate the cost of building a sanatorium, after visiting the leading institutions, were about to make an adverse report because of an insufficient appropriation when their attention was called to a more simple and logical plan. They had $75,000, which in view of their investigation seemed hardly enough to make a decent beginning. By adopting a more rational and economic plan they now have a full-fledged institution in successful operation entirely within the limits of their appropriation.

Then, too, there is but little demand for a state sanatorium. In view of existing conditions this may seem like a strange statement. I venture the prediction that if this state, with its estimate of 20,000 to 25,000 consumptives, had a sanatorium of 200 beds it could not be filled with suitable cases. Under present conditions early cases can not be secured. We must first educate the public to believe in the curability of tuberculosis, to what extent, and under what conditions, before we build expensive sanatoria, and in the meantime teach the necessity for and how to make an early diagnosis. In other words, we must create a demand before we undertake to supply an assumed need which does not exist. To build large and full-fledged sanatoria is a mistake. Growth should be natural. The sanatorium idea is a result of an evolutionary process. England first called attention to the underlying principles of treatment. The Germans have systemized it, and it now remains for us to simplify methods and thus make it more scientific and economic. Let us have a clearer understanding of what we are undertaking to accomplish before we proceed further. Thus far we have been advocating the establishment of public sanatoria on the plea of their therapeutic value. This is too narrow a view, and if based on this plea alone the result under present conditions will be disappointing and lead to a reaction against the sanatorium idea. Its real value is not alone in the number cured, which will vary according to the class of patients admitted. Each patient cured demonstrates the curability of the disease. Those who are not, the necessity for early diagnosis, and all, whether cured or not on their return to their homes, are zealous in preaching the doctrine of fresh air, hygienic living and the prevention of the disease. If each cured patient does not save the life of at least three others his life was not worth saving.

Theoretically all tuberculous cases should be cared for. This will come about in due course of events. For the present, however, we will not be able to secure an appropriation except for curable cases. This is the plea which has been made in other states where sanatoria have been established, but they have found to their disappointment that in order to keep their beds filled they were compelled to take advanced and far advanced cases, thus converting institutions which were designed for the curable simply into a refuge for the incurable. This has a tendency to discredit the whole sanatorium movement, and in our zeal we should not complicate the situation further by multiplying these mistakes. It is our duty rather to profit by them and by proceeding in an orderly and intelli-

gent manner place the sanatorium in its proper relation to this problem by meeting the demands of the situation as they arise.

I am fully persuaded that local sanatoria as provided by the Glackin law is far more economic and will result in making provision for a much larger number and thus be more effective. Where local hospitals exist sanatoria can be conducted under the same management, thus reducing the cost of administration, which is no small item. A King lean-to or a few tents costing only a trifle are enough to install any local sanatorium in connection with a hospital. This plan is elastic and can be made to meet the immediate demands of any community (unless it be the city of Chicago) and enlarged from time to time to meet an increased demand with no loss of what has been done and with but little additional expense.

The plan of local sanatoria has at least the merit of economy and can be put into operation without delay. If it does not work out in practice as is hoped and believed, no great mistake will be made and the failure will assist in pointing the right way. By all means, it should be tried, and in the meantime further attempts to secure an appropriation for a state sanatorium should be abandoned. The time may come when the demand will be so great that separate institutions will be required, but this will not be until the sanatorium idea has been generally accepted as the most rational and necessary. This will not occur until the profession and public more fully realize that treatment outside the sanatorium is as a rule a failure. The economic feature of the local sanatorium is the strongest argument in its favor, for however much we may plan or theorize, the final analysis of this whole question is one of dollars and cents.

Let us keep in mind that the chief value of the sanatorium is educational. To reap this advantage to the fullest extent we should place the sanatorium in each community. In other words, instead of taking the people to the sanatorium, take the sanatorium to the people. The influence of these institutions is not only destined to prevent and cure tuberculosis but modify our views in regard to the treatment of other diseases. It will also influence the future construction of our hospitals and homes along more rational and economic lines. These influences will be more largely felt by taking the sanatorium to the people.

Many a laudable undertaking has failed because of misdirected enthusiasm and ill-tempered zeal. Let this not be written of us who are responsible for the success or failure of this new departure, which not only involves the interests of our own unfortunates but those of other states as well. Our success will assist in solving a most perplexing problem; our failure will render its solution more difficult and perplexing. If we have a realizing sense of our responsibility and meet it with both caution and courage there is no doubt of our success, for the plan is rational, and only hastily-formed or ill-advised schemes can make it a failure. Enthusiasm and zeal must be properly directed to be effective. Much of our energy and resources have been wasted by taking it for granted that the problem, which is really very complex, is easy of solu-

tion. We should carefully consider any proposed method before undertaking to put it into effect. No action should be taken to provide a sanatorium in any community until there is sufficient public sentiment behind the movement to support it when established. Any attempt to force provision for the tuberculous patient ahead of public sentiment will not only result in the failure of the movement but loss of confidence which it will be difficult to restore. Sentiment, enthusiasm and vanity have been the dominating factors thus far in the building of sanatoria. What we need is more philanthropy, common sense and the application of business principles. We need the softening influence of sentiment, the motive power of enthusiasm, but vanity has no place in the scheme.

This whole question must be considered from a business standpoint and conducted on business principles. Just in proportion as we depart from business methods in the conduct of these institutions, just to that extent do we impair their usefulness and invite failure. It is not possible except on the most extravagant scale to provide for even a majority of these sufferers; therefore, it is the duty of those most prominently identified with their care not only to devise inexpensive methods but to firmly oppose the present tendency to extravagance and lavish display which characterizes all of our leading sanatoria.

HOW SHALL WE APPLY THE NEW ANTITUBERCULOSIS LAW? (b) RESOURCES NOT AVAILABLE.*

EVERETT J. BROWN, M.D.
DECATUR, ILL.

The available resources of the state, county and municipal government of Illinois for the treatment of cases of tuberculosis have always been notoriously bad and inadequate, and it is this fact which has led to the passage of the new law, the application of which is the subject of this symposium to-day.

The state itself has practically never had any means for the exclusive care and treatment of consumptives; at the different state prisons and institutions for the insane, blind, deaf and dumb and the county almshouses, various but necessarily limited special accommodations have been provided for the care of the tuberculous infected state charges, but in some of them the consumptive patients are not isolated but occupy the general wards and are a great menace to the other inmates. It is usually admitted also that in the various penitentiaries a life, or even a long term sentence, is often only a sentence of death from tuberculosis. Of the various county organizations only a very few have any available resources for the handling of the tuberculous sick. Cook County up to the present time has no hospitals exclusively devoted to the care of consumptives, but on April 7 the people voted "Yes" on the $2,000,000

*Read at the Annual Meeting of the Illinois State Medical Society, May 19, 20, 21, 1908.

bond proposition, which included plans for a model institution near Chicago for the incurable consumptives, making other arrangements for their early or middle-stage cases. At present what answers to a "City Hospital"—Cook County Hospital—has about forty beds, twenty for each sex, in a well-built, airy but badly located cottage, which receives patients and cares for them during the time necessary to make a diagnosis, after which the patient is sent to the County Sanatorium for consumptives, which is located on the county poor farm at Dunning and was built for about 200 patients; it is crowded to the limit and is inadequate and inefficient. During 1907 and up to March 28, 1908, the Cook County institutions cared for only 2,805 out of the approximately 8,000 tuberculous patients of the county, or about one-third. Of the 350 tuberculous patients now cared for by Cook County, forty are quarantined at the poorhouse, as beds elsewhere are unavailable. This new hospital for the late cases surpasses all other measures in the fight against this disease, as it limits the contagion by removing the patient from his home, and from the danger of infecting his family and friends.

Further, the Chicago Tuberculosis Institute has now in operation seven dispensaries where ambulant cases are treated and the patients instructed about their disease, and in addition a corps of visiting nurses go to their homes to carry out the campaign of education. Of course, many other dispensaries in Chicago, and in some of the larger cities throughout the state, accept and treat consumptives as they do those suffering from other diseases. The Chicago Home for Incurables also takes a few cases of tuberculosis. In some counties the county poor farm has been made use of for the establishment of day camps, and in this connection I wish to state that it is on the county poor farms with their large acreage that the most splendid locations can be found for the carrying into effect of the provisions of the new law; tent colonies or cheap hospitals could be erected on every county poor farm, not near enough to be a menace to the other inmates, but the plan already in operation would facilitate management and reduce the running expenses. The grounds of the various city hospitals throughout the state could be used under the new law for the establishment of tent colonies. If the people of the state will only properly appreciate the splendid opportunity the new law gives even to the very small communities for the care, prevention and cure of thousands of cases of tuberculosis, which are now under our present means doomed to certain death, the intent of the makers of the new law will be realized. It is a disgrace to the state that in nearly 100 counties of this great commonwealth there is not the slightest provision made for the indigent consumptive, who, being without means for climatic sanatorium treatment, must languish in a home made poverty stricken by being denied the earning power of a father or mother or a grown son or daughter, who in the years of their greatest earning capacity are doomed to many months of invalidism and eventual death. And it is in the smaller towns and rural communities where the greatest opposition will be found when the referendum provisions of the new law are carried out, for it is among the farmers

where the greatest opposition to the levying of the additional taxes is found.

Every small city or country town has many vacant spaces of ground, which could be obtained free of charge, or for a nominal rental, where tent colonies or dispensaries could be established under the provisions of this new law which would be able to treat thousands of indigent consumptives, furnish them with the proper food, and, above all, educate them, and the other members of their families, and through them the community how to live with the disease, and how to prevent its spread. This campaign of education is especially needed in the rural communities, where I have seen several members of a family in more than one instance succumb one after another to this disease after an initial case had thoroughly infected a farm house.

In my own county as in the majority of the other counties of the state there is not a single provision made for the care of a poor consumptive, unless he is in the last stage, and then he can be sent only to the county almshouse; to think of furnishing free advice and treatment to an early or middle stage case among the poor is regarded as a great extravagance by the average county supervisor.

In conclusion, I wish to say that if in each county the local medical society as a body would take up this matter and obtain through the referendum a carrying out of the provisions of this act in their respective communities, many hundreds of cases could be successfully treated, further infection of other people could be prevented and millions of dollars saved to their families and the state thereby.

THE TUBERCULOSIS DISPENSARY AS IT MAY BE ESTABLISHED UNDER THE NEW LAW.*

ETHAN A. GRAY, M.D.
CHICAGO.

Heretofore the tuberculosis hospitals in this country have been, from motives of high economy, devoted to the treatment and cure of the incipient case, or have served as places of refuge for the dying consumptive. The periods of treatment in the incipient and terminal cases are short—a few months, relatively speaking. But there is a large class of consumptives which can not be submitted to sanatorium treatment except at considerable expense. I refer to the moderately advanced consumptive, the patient who may linger on for two or three years before the end comes, or who may need attention for a year or two before his disease is so checked that he can again become self-supporting. Such cases as these must be treated in another way, and the best way which suggests itself is the combined home and dispensary treatment.

---

*Read at the Fifty-eight Annual Session of the Illinois State Medical Society, May 19, 20, 21, 1908.

Every municipality establishing its sanatorium under the act under discussion will seriously consider the initial and maintenance cost of caring for its consumptives. It will soon be found, upon investigation, that, as above indicated, the incipient or moderately early cases offer the greatest return in the matter of cure—hence the great incentive to treat this class of cases. On the other hand, the late consumptive is a greater danger to the public by reason of his increasing weakness, which renders him less able to observe necessary sanitary precautions. The isolation of such an indigent patient will recommend itself to the student of prophylaxis.

The treatment of the moderately advanced consumptive is a very different proposition. It is difficult to determine how long such a patient will live, for the anatomical changes are not always a sure guide to the degree of severity. Certain patients presenting cavital lesions will remain in a condition approaching arrest for years, being able to perform light work from time to time during this period. It is evident that to house such patients in a sanatorium would be incurring a large and unnecessary expense. These people are usually tractable when carefully instructed and cooperate willingly with physician and nurse, particularly when they are visited at frequent intervals. They can be placed out of doors at home on porch, or roof or in yards. All of this home service lies without the province of the sanatorium proper, and must be referred to the tuberculosis dispensary.

This dispensary is not outside the provisions of the Glackin law, inasmuch as it may be considered to be a part of a sanatorium—the out-patient department, for example. It embraces in its broadest sense the care of the tuberculous individual in his home, and endeavors to apply to his case the same factors which we find in the sanatorium, viz., physician, nurse, instruction and treatment. In addition, and more far-reaching, is a personal study of the patient's resources and a suspension of his daily life; further, routine examination of the other members of a patient's family often reveals tuberculosis in its incipiency.

The duty of the dispensary is not at an end when the patient has been advised and instructed. It often happens that the patient in direct need of help is also financially helpless. He lives, perhaps, in a congested district where four-room habitations are frequent and porches and yards are hard to find. In such cases it is manifestly impossible to get results without extending pecuniary aid. Here enters the nurse; her work now consists in finding assistance for the patient. This is often supplied by cooperating benevolent societies. She may find it necessary to remove the family to quarters where the patient can practice out-door living; she may merely arrange existing facilities for the benefit of the patient; in a word, she must see that the patient lives properly and that he is provided with the means to do so. Most of all, the usefulness of the nurse lies in the personal relation which grows up between her and her patients. Add to this the personal interest of the dispensary physician, and there results a powerful influence over a dangerous patient and his sometimes equally dangerous family.

The expense of establishing this dispensary is very small compared with that of the sanatorium. Three rooms, plainly furnished with chairs, desk, screens and examination table, and equally equipped with scales, microscope, reagents and stationary, may cost about $200. Rent will vary according to locality. Monthly expenses will consist of the last named item, heating, lighting and nurse's salary, the latter, about $75. The physician is usually left off of the salary list. The dispensary should be located at some central point, easy of access from all directions. If it is designed to care for patients outside urban limits, the means of transportation must be considered. The patient should not be required to travel any great distance because of resulting fatigue and danger of dust infection. Neighboring villages and towns, connected by rail or trolley, may readily combine to establish one central dispensary, dividing the expense of establishment and maintenance. In the case of patients living in outlying districts, the distance from the railway might be a serious obstacle, for the nurse who must visit the patient in his home, as well as for the patient who must visit the dispensary. However, each case is a problem by itself and solutions are usually found.

Without doubt, the principles of hygiene inculcated in patients in sanatoria are far reaching, and the doctrine of open air living is carried to many a conservative village and farmstead by the returning convalescent. The same excellent work is accomplished by the scientific teaching of the tuberculosis nurse.

Briefly, the dispensary is, in the smaller cities, exactly as it is in the larger, a most economical and efficient means of treating the moderately advanced indigent consumptive. The influence is, in my opinion, quite as broad, if not broader, than the sanatorium, by reason of the larger number of patients reached. Especially is this true where house conditions permit of the ideal house treatment.

43 Pine Grove Avenue.

PHYSICAL EXAMINATION OF BELOW-GRADE CHILDREN.*

CAROLINE HEDGER, M.D.
CHICAGO.

Two years ago, with the cooperation of a principal, there were examined physically here in Chicago 208 school children. The whole list given me numbered 250 and represented the children noticeably below grade in a school of 1,100. Some moved away, some went to work, so that the number which I have to report is 208. Into the problem of the below-grade child enter many factors: first, foreign birth and inability to understand what is wanted of him; second, foreign parents who, after the child has learned the language, can not assist him or even understand the problem the child has to meet; third, the existing conditions of the public schools, (a) too many children to one teacher, (b)

* Read before the Chicago Medical Society meeting Jan. 6, 1909.

lack of ventilation, and (c) the nervous strain resulting from a multiplicity of examinations; fourth, and perhaps a larger factor than any of the preceding, is the physical condition of the child himself. About this matter little has yet been done compared with what must be done. Dr. Allport and other workers have for years been waging a war to have children's eyes examined. This is a step forward and is being done here in Chicago. The recording on a sheet in the principal's office the details of the gross defects of vision in the children is not enough; the defects must be well corrected and the wasted nervous energy stored up for better things.

The tables of Roach on weight and measurement give an average for children of different nationalities. If as a class the backward children fall below this average (which, at best, may not be normal) in weight, the fact should be known, but knowing is not enough. The below-weight children must have procured for them such environment that not only can their present working efficiency be raised, but that they can be protected from future illness, especially tuberculosis.

The children were, in a small percentage of cases, immigrants, and in a large percentage of cases the children of immigrants, mostly from the peasant class. Bohemians, Polish, Irish, Germans, Greeks were the nationalities represented. It would seem that families so recently imported from the land would show some of the sturdiness that comes from outdoor work. It was not apparent; superficially considered, the children looked spindling and anemic.

On careful examination such proved to be the case; almost every class showed our children to be taller and thinner than the Boston children of the same age. Peckham, who measured Milwaukee children, thinks western children, as a rule, taller for their age than eastern children, but some of our children show a greater tendency to thinness than his. Of course, the small numbers make any absolute deduction from averages impossible, but the figures will bear out the general appearance of the children, Table 7.

Although it was winter, the clothing, as a rule, was scanty and the children bore traces of neglect in the shape of pediculi, more than 70 per cent. of the girls being thus afflicted, Table 4. It may be remarked in passing that two years of medical inspection has reduced this skin disease to about 23 per cent. in the girls of this school. Many of the children were dirty. This can not be ascribed entirely to neglect, but to environment. There are no bath tubs in the houses, less than one to the block at least. The houses are poorly built and draughty. The average wage makes it necessary for many families to eke out their warmth with picked-up fuel; frequent bathing becomes under these circumstances an impossibility.

Approximately 25 per cent. showed defective vision, besides those having external diseases of the eye, Table 9. Most of these eyes had no attempt at correction; the price of glasses even in dispensaries is almost prohibitive, besides a good share of the old prejudice against lenses exists. It was often a matter of wonder that the child had arrived at even the

third grade with the handicap of such vision as was shown. This test was, of course, the rough wall-chart test at twenty feet. The amount of eyestrain in the other three-quarters could not be estimated.

The teeth (Table 2) showed, almost without exception, entire lack of care. Only seven presented teeth without caries. In considering the bearing of this fact on the nutrition of the group as a whole two factors must be thought of: 1. The imperfectly chewed food and resulting malnutrition. 2. The loss of sleep and general wear and tear from toothache which is, of course, common with so many neglected carious teeth.

The high percentage of enlarged cervical glands (Table 1) is probably dependent on several factors, some of which are shown in the tables.

1. Pediculosis, 72.3 per cent. in the girls. 2. Carious teeth, 96.7 per cent. of both boys and girls. 3. Hypertrophied tonsils, 55 per cent. boys, 65 per cent. girls, Table 3. These findings would, of course, give a large number of enlarged cervical glands. Probably some of these glands were tubercular. If the skin vaccination test could be made, as suggested by Pirquet in the last tuberculosis congress, we could estimate much more exactly the menace to the child from this finding. There is another factor not shown in the tables that undoubtedly contributes to the depression of vital force shown by these enlarged glands. This is the vitiated air in which many of the children sleep. The bedrooms in the district are small, averaging about 7x11 feet, and, as a rule, accommodate four or more people. The windows are not opened, and the result is one factor in the condition of the children.

One finding was rather surprising to me, namely, the small number of mouth-breathers (Table 3) with the large number of badly enlarged tonsils. Certainly adenoids are not so frequently encountered as would be expected.

The large number of thyroid enlargements, especially in boys, is striking (Table 1). I have been able to find no figures in regard to this finding in other below-grade children. In so small a number of cases in a neighborhood where goiter is common it may be coincidence.

The hemic murmurs, as shown in Table 6, quite bear out the appearance of the children as to anemia and blood tests outside this group, but in the same class of children average below 70 per cent. hemoglobin. The proportion of transmitted murmurs is exactly the same between boys and girls, and in many cases rheumatism could be found even in the imperfect history given by the child himself. The rapid and irregular pulse may be, in part, dependent on the anemia, but, in part, depends on the universal intoxication of the children by tea and coffee (Table 5). Only two children were free from such intoxication. One of these was a Greek boy who had only been here nine months.

Children 10 years old insist they can not do without tea and coffee. On the other hand, smaller children when milk can be afforded readily give up coffee. The distress of a good Polish mother when, returning from a ten days' outing in the country, the children refused coffee and

demanded milk, was pitiful. She had eight children, one tubercular, and supported them by scrubbing. Forty-two cents a day would have given her an inadequate supply, and one dollar a day had to furnish food and clothing, heat and light. Coffee undoubtedly replaces food for most of these children.

Considering the factors brought out in the preceding pages, Table 3 needs little explanation. Given children with a tendency to be below weight for their height, with many carious teeth and diseased tonsils, with findings indicating anemia, with the necessity of replacing food by coffee, with poor ventilation and illy-managed dietaries, this is a good showing of negative lung findings. One child was having pulmonary hemorrhages, one was running a temperature in the mornings when I saw her. Four presented diffuse bronchitis and one was a great sufferer from asthma.

We have here a problem of 208 much below-grade children out of 1,100, nor in this number probably exceptional for industrial neighborhoods, as the school is unusually well managed and the spirit of the teachers fine. We have foreign parents badly housed, and with low wage unable to procure adequate nutrition from the food presented in their new environment, with their limited knowledge and buying power. The management of these children in school demands our attention, and public sentiment must demand the very best care for such children. Manual training, well-ventilated rooms, and small classes, are minimum requirements. It seems ridiculous to expect those with defective vision to take successfully work they do not see or see at great expense to their nervous systems. The real center of the problem is the nutrition of the child. Sir John Gorst gives t stimony that below-grade children forge ahead after eighteen months of proper feeding, while another author, Hrdlicka, puts the case more strongly when he says: "A child who could not be improved by better food and better hygienic surroundings is a very rare exception; an invererate backwardness in learning is not noticeable except in a few instances. The English law demands that the child be fed, whatever the causes of his malfeeding, as in this way alone can they make citizens who will have enough stamina so that they will not become dependent. This demands a radical readjustment of wage and rent. In the meantime some things could be done that would not involve parental responsibility or fix heavy burdens on the community at large.

1. Keep up a continual campaign of education in ventilation and nutrition, an extension of such work as was done so effectively by the health department of Chicago for sick babies last summer. Pamphlets in foreign languages embodying advice and simple recipes of nutritious and cheap food.

2. Cooking classes for parents at evening schools.

3. Country schools for the pretubercular.

4. As an immediate aid to our problem of the below-grade children I should like to present for your consideration the sale of milk in school buildings at 1 cent per glass, the milk to be sold by ticket exclusively, so that, if necessary, charitable institutions could supply supplementary

diet for a child without comment from the other children. The price per glass would cover practically the cost of the milk; the labor would be inconsiderable, the equipment simple. We could in this way successfully compete with the school store and the unspeakable paper lunch bag. We could, for 2 cents a day, supply 400 calories, while the parents would consider it only supplementary feeding and would not relax their efforts to supply three meals a day.

It is a fact that in families with insufficient dietary the children are given pennies to spend, perhaps with the thought of giving some pleasure in a cramped life. If this expenditure could be utilized in nourishment at cost without the stigma of charity, physical improvement would result. In addition, financial advantages can be urged, as in New York it has been estimated that the below-grade children cost the public school fund a half million dollars yearly.

TABLE 1.—EXAMINATION OF GLANDS.

	S.	M.	L.	Total. No.	Total. %
125 Boys.					
Enlarged cervical glands	104	1	7	112	89.6
Enlarged thyroid	27	1	1	29	23.2
83 Girls.					
Enlarged cervical glands	70	0	9	79	95.1
Enlarged thyroid	15	2	1	18	25.3

TABLE 2.—TEETH.

125 Boys. Age.	No.	Good.	Medium.	Bad.	83 Girls. Age.	No.	Good.	Medium.	Bad.
8	12	1	5	6	8	10	2	4	4
9	8	2	3	3	9	9	3	3	3
10	17	3	8	3	10	11	2	4	5
11	25	8	13	4	11	9	3	2	4
12	32	13	9	7	12	19	9	7	2
13	19	8	5	4	13	13	4	7	2
14	11	3	3	5	14	9	5	3	1
15	1	..	1	..	15	3	1	2	..
Totals		38	47	32			29	32	21

Good means 1 medium or 2 small cavities. Medium means 1 to 3 large cavities. Bad means 4 or more cavities. Seven had teeth free from cavities.

TABLE 3.—RESPIRATORY TRACT.

Boys. Age.	No.	Mouth Breather.	Hypertrophy Tonsils.	Laryngitis.	Lungs. Positive.	Lungs. Suspicious.	Lungs. Negative.	Cough.
8	12	0	7	1	1	6	5	1
9	8	1	7	0	4	2	2	1
10	17	2	7	0	3†	7	7	1
11	25	3	17	0	4	11	10	3
12	32	1	18	0	6	11	15	2
13	19	0	9	1	4†	8	7	1
14	11	1	4	1	1	4	6	1‡
15	1	0	0	0	0	1	0	0
Totals.	125	8	69	3	23	50	52	10
Per cent.		6.37	47.2	2	18.4	40	41.6	0.8

Girls.

Age.	No.	Mouth Breather.	Hypertrophy Tonsils.	Laryngitis.	Lungs. Positive.	Lungs. Suspicious.	Lungs. Negative.	Cough.
8	10	1	8	0	1†	7	2	2
9	9	1	5	0	0	6	3	3
10	11	0	10	1	2	4	5	0
11	9	0	7	0	2	4	3	2*
12	19	0	11	0	3	8	8	3
13	13	1	7	0	1	4	8	2†
14	9	0	4	0	1	1	7	3
15	3	0	2	0	1	2	0	0
Totals.	83	3	54	1	11	36	36	15
Per cent.		3.6	65	1.2	13.4	43.3	43.3	18

† One case of bronchitis.
‡ Asthma.
* One of these had morning fever; the other lived in a house where there had been tuberculosis.
One or both tonsils are involved in this hypertrophy.
Suspicious indicates a single well-marked finding such as prolonged expiratory murmur with high pitch.
Positive indicates two or more confirmatory signs of consolidation.

TABLE 4.—SKIN DISEASES, ORTHOPEDIC DEFECTS.

Skin Diseases.	125 Boys. No. of Cases.	83 Girls. No. of Cases.	Orthopedic Defects.	125 Boys. No. of Cases.	83 Girls. No. of Cases.
Pediculosis	50	60	Curvature, slight...	11	9
Ringworm	1	0	Curvature, medium..	12	23
Impetigo contagiosum	0	1	Curvature, bad.....	2*	1
Tinea versicolor	0	1	Winged scapula.....	10	4
Eczema Chr.....	0	1	Pigeon breast.....	0	1
			Scoliosis	0	1
Per cent.....	40	72.3	Per cent.....	28	47

TABLE 5.—TEA AND COFFEE.

	Tea.	Coffee.	Both.	Tea, Times per Day. Once.	Twice.	Thrice.	Coffee, Times per Day. Once.	Twice.	Thrice.
Boys (125)	69	83	72	34	26	13	32	41	33
Girls (83)	65	68	52	13	8	17	9	7	16

TABLE 6.—HEARTS.

Boys. Age.	No.	Irregular Pulse.	Hemic Murmurs.	Transmitted Murmurs.	Girls. Age.	No.	Irregular Pulse.	Hemic Murmurs.	Transmitted Murmurs.
8	12	2	5	3	8	10	1	4	3
9	8	2	4	2	9	9	3	5	1
10	17	2	8	2	10	11	1	3	0
11	25	8	14	2	11	9	3	5	0
12	32	7	17	3	12	19	3	7	3
13	19	5	7	0	13	13	4	7	1
14	11	2	7	2	14	9	1	1	1
15	1	1	0	0	15	3	0	1	0
T't'ls.	125	29	62	14		83	16	30	9
Per cent.		23.2	50.4	11.2			19.2	36.1	10.8

TABLE 7.—COMPARISON BETWEEN ROACH'S AND AUTHOR'S MEASUREMENTS—HEIGHT, WEIGHT, CHEST.

Boys. No.	Age.	Height. Author. In.	Height. Roach. In.	Weight. Author. Lbs. Av.	Weight. Roach. Lbs. Av.	Chest, Inches	Girls. No.	Age.	Height. Author. In.	Height. Roach. In.	Weight. Author. Lbs. Av.	Weight. Roach. Lbs. Av.	Chest, Inches.
12	8	47.76	47.76	53.81	53.81	22.65	10	8	47.21	47.58	49.11	51.56	21.87
8	9	48.9	49.69	56.08	59.00	22.9	9	9	50.08	49.39	51.61	57.	23.11
17	10	52.37	51.68	64.6	65.16	24.55	11	10	52.95	51.34	61.45	62.23	23.72
25	11	53.55	53.53	68.3	70.04	24.63	9	11	53.75	53.42	57.94	68.70	24.33
32	12	56.21	55.11	76.70	86.75	25.83	19	12	56.50	55.88	78.30	78.16	25.56
19	13	56.86	57.21	83.03	84.67	26.51	13	13	58.07	58.16	81.90	88.46	25.93
11	14	57.97	59.58	86.34	94.49	27.12	9	14	60.25	59.94	92.7	98.23	27.97
1	15	59.25	....	90.	....	26.	3	15	60.3	....	95.	....	29.08

TABLE 8.—SUMMARY—125 BOYS; 83 GIRLS.

	Boys. Per Ct.	Girls. Per Ct.		Boys. Per Ct.	Girls. Per Ct.
Cervical glands	89.6	95.1	Negative lungs	41.6	43.3
Goitre	23.2	25.3	Suspicious lung findings	40	43.3
Hypertrophied tonsil	55.2	65	Positive lung findings	18.4	13.4
Irregular pulse	23.2	19	Cough	8	19
Hemic murmurs	50.4	36.1	Pediculosis	40	72.3
Transmitted apical murmurs.	11.2	10.8	Bad teeth	25.6	25.2
Lateral curvature	20	39.7	Tea and coffee	99.1	100

TABLE 9.—EXAMINATION OF EYES.

Boys Examined—52.				Girls Examined—38.			
Line Read at 20 ft.	With Right Eye.	With Left Eye.	With Both Eyes.	Line Read at 20 ft.	With Right Eye.	With Left Eye.	With Both Eyes.
Blind	..	1	..	Blind	..	..	..
200	..	..	..	200	..	1	..
100	4	4	1	100	4	2	2
70	3	2	..	70	1	2	..
50	4	6	1	50	4	2	2
40	6	3	..	40	1	1	..
30	5	4	1	30	3	9	..
20	4	6	1	20	4	..	..

A child with normal vision should, when placed at 20 feet, read the line marked 20 with either eye

	125 Boys. No. of Cases.	83 Girls. No. of Cases.
Subjective fatigue	19	11
Blepharitis marginalis	2	2
Two-colored iris	1	1
Strabismus	2	0
Opacity of cornea	0	2
Cyst of lid	1	0
Conjunctivitis	4	2

TABLE 10.—EXAMINATION OF EARS.

	125 Boys. No. of Cases.	83 Girls. No. of Cases.
Earache	8	3
Suppurative otitis media	7	2
Tender mastoid	6	2

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

GENERAL OFFICERS 1908-09

PRESIDENT - - - JAMES WILEY PETTIT, OTTAWA
FIRST VICE PRESIDENT - JAMES L. WIGGINS, EAST ST. LOUIS
SECOND VICE-PRESIDENT - - E. M. ECKARD, PEORIA
TREASURER - - - EVERETT J. BROWN, DECATUR
SECRETARY - - - - EDMUND W. WEIS, OTTAWA
(Ex-officio Clerk of the Council.)
EDITOR - - - - GEORGE N. KREIDER, SPRINGFIELD
522 Capitol Avenue.
ASSISTANT EDITOR - GEORGE EDWIN BAXTER, CHICAGO
1916 Evanston Avenue.

THE COUNCIL

C. C. HUNT, DIXON.
J. H. STEALY, FREEPORT.
J. F. PERCY, GALESBURG.
CARL E. BLACK, JACKSONVILLE.
J. Q. ROANE, CARLYLE.
W. K. NEWCOMB, CHAMPAIGN.
H. C. MITCHELL, CARBONDALE.
M. L. HARRIS, CHICAGO.
J. WHITEFIELD SMITH, BLOOMINGTON.

APRIL, 1909.

THE ILLINOIS STATE MEDICAL SOCIETY AT QUINCY.

THE PROFESSION OF THAT CITY ALIVE AND ENTHUSIASTIC OVER THE PROSPECTS OF A RECORD-BREAKING ATTENDANCE AT THE MEETING, MAY 18, 19 AND 20, 1909.

The people and profession of Quincy are looking forward with a good deal of pleasure to the visit of the Illinois State Medical Society in May, for it is an honor to entertain such a gathering of men as comprise the members and leaders in this society. Then the beautiful old city of Quincy will be at her best. Situated on the limestone bluffs which line the Mississippi at this point, she commands the finest natural location for a city in the entire middle west. Our city is the largest between St. Paul and St. Louis and Kansas City and Chicago, and her fame as a manufacturing city is second to none in cities of her class, while her beauty is manifested in her wide, spacious and elm-shaded streets. No other city of her class has so many home-owners as we. We have many things of interest to show our visitors, chief of which is the $300,000 superb park system, the gem of the parks being "Indian Mound Park," with its original Indian mounds stretching along the bluffs, from which a most magnificent view is had of the river and the cities

up and down the "Father of Waters." The beautiful Soldiers' and Sailors' Home, with thirty-odd buildings and 2,000 members located here, is one of the model homes of the country. Quincy's waterworks system and the "Quincy way" of purifying and filtering its water is famous the world over. These are but a few of the advantages we possess, but we feel that all who have ever visited Quincy will want to come again, and those who have yet to make their first visit will not regret making definite plans to be here at the time of the state convention.

Particularly in the matter of hotels and lodging-houses are special pains being taken to accommodate the largest attendance in the history of the society. Quincy has seven hotels, the leading one being the Hotel Newcomb, which is second to none in the state outside of Chicago. These will be supplemented by the entertainment in many private homes of the city. The local profession has been canvassed and have arranged to accommodate over a hundred. We wish to make emphatic the fact that places have been obtained for the eight hundred visitors which we confidently expect to be with us in May.

On the evening of May 19 a boat ride and river excursion is being planned by the local committee of arrangements. The entertainment of the ladies has also been arranged for.

The Hotel Newcomb will be headquarters, and the place of meeting the Vermont Street Methodist Church, located but one block from the postoffice. The scientific program for the meeting is the best that has been offered for many years; it will appear in THE JOURNAL for next month.

Any inquiries in regard to accommodations or hotels may be addressed to Dr. L. H. A. Nickerson, chairman of the committee which has that matter in charge. A list of the hotels, with rates, etc., will be published later. Any other inquiries relative to the state convention may be addressed to Dr. C. A. Wells, the secretary of the local committee.

THE PASSING OF HOMEOPATHY.

In our correspondence columns will be found a communication on homeopathy which should be read by every member of the State Society and every graduate of a medical school practicing in Illinois. It should, moreover, be read by every honest practitioner of osteopathy. This communication, of course, came to us unsolicited. It was written by a man who for many years was a teacher in homeopathic schools and was a firm believer in the extravagant doctrines first promulgated by Samuel Hahnemann. Later in life he took a degree at a regular medical college and got himself straight on the books. This latter degree was hardly necessary, as he had for years used all sensible therapeutic procedures in his practice of medicine and surgery. His action, excepting the taking of the second degree, has been imitated by hundreds of graduates of sectarian schools who have with him recognized the vast

importance of modern discoveries influencing medical science. Happily the great body of the profession has recognized the plight of these practitioners and have admitted them as members of local medical societies without hesitation. The fact is that some of the better class of sectarian schools have been giving better instruction than some of the poorer regular schools whose graduates found no trouble passing certain venal boards of health and becoming members of local societies. We believe it is true that a number of men who have taken up with osteopathy in the belief that it really rested upon a scientific basis have found their error and are anxious to advance to a full knowledge of the science of medicine. We have been told that the present desperate efforts of osteopaths to secure recognition by the passage of a law giving them an examining board is largely due to their knowledge that osteopathy has only a minimum of truth as its basis. It is a question whether it would not be wise to admit the better qualified osteopaths into medical colleges and graduate them after a shorter course than is required of medical students who are entering on the course of study and thus hasten the extinction of this waning sect.

This ex-homeopath has made a strong case in favor of the abandonment of homeopathy; an even stronger plea could be made for the abolition of the sect of eclectics and physio medicals. From the schools of these two combined only 120 were graduates in 1907, and it certainly will only be a few years until their names and schools will be reminiscences as vague in medical history as arminianism and predestinarianism are in theological history.

Far be it from us to gloat over the decadence of sects in medicine. In the dark ages of science they seemed unavoidable. Even in the light of the past quarter of a century Christian Science and osteopathy have gained supporters from people presumed to have a sufficiency of gray matter. Rather do we hope for the day when the sunlight of truth shall so illumine the pathway that no deviation will be possible to those outside the hospitals for the insane and feeble-minded.

STATE INSTITUTION FOR CRIPPLED CHILDREN.

In July 1907, we called attention to a bill carrying an appropriation of $60,000 passed by the Illinois General Assembly for the establishment of a state institution for the treatment of deformed and crippled children. A similar bill has been introduced again in the legislature this year by Representative Chipperfield and demands consideration. Nothing has occurred during the past two years to make us think that Governor Deneen was in error in vetoing the former bill. Recent reports from the New York State Institution tell the same story, that the number of children seeking treatment in the hospital of that great state has remained extremely limited and of such a character that treatment can be given them at the various hospitals now to be found in all parts of every commonwealth. The rapid improvement in the treat-

ment of tubercular diseases leads to the well-founded belief that these diseases are rapidly decreasing in number and before many years will be altogether eliminated. We understand the gentleman pushing this matter is a resident of Galesburg and that he has a sentimental interest which, while creditable to his heart, is scarcely sufficient to warrant the state in the expenditure of an abnormal amount for the care of a limited number of the unfortunates of the state. We trust, therefore, that this bill will not be pushed through to a passage, and that if it does the governor will be as prompt to veto it as he did the previous bill.

SUICIDE AMONG ADVERTISING SPECIALISTS.

H. C. Sechrist, an advertising "specialist," graduate of Miami Medical College, Cincinnati, 1881, formerly located in Chicago and Milwaukee, committed suicide, February 4, in Moline, Ill. This is not the first instance we have known of the self-destruction of the advertising specialist, and when the business methods of this gentry are considered it does not seem strange that a large percentage of them get tired of life and seek consolation in self-destruction. There should be in this a lesson for the young practitioner having in mind deviation from the traditional straight path of the medical profession.

THE FIFTY-NINTH ANNUAL MEETING.

The fifty-ninth annual meeting of the State Medical Society will be held at Quincy, May 18, 19 and 20, and promises to be an occasion comparing well with other meetings of our organization. Quincy is beautifully located on the east bank of the Mississippi River and is one of the larger cities of the state inhabited by substantial and enterprising citizens, and has a wide awake, progressive medical society, the members of which are taking an unusual interest in advancing the interests of the profession. Arrangements have been made by the committees to secure comfortable accommodations for all those who may attend, and it is hoped that a record-breaking number will take advantage of the opportunity to assemble for professional education and entertainment. The development of the local society in all parts of the state has brought forward a large number of men interested in society work, and these state meetings should be, as they usually have been, each an improvement upon the one preceding. Certainly no one interested in the practice of medicine in Illinois can afford to miss this occasion.

OSTEOPATHIC LEGISLATION.

Again the osteopathic practitioners are busy with the members of the Illinois General Assembly and again it becomes necessary for every member of the state society to get busy and oppose the sectarian and

dangerous bill which they propose and which they have already gotten through the Senate. In the House the bill has been read once and was referred to the Committee on Judiciary, which has given two hearings on the subject and appointed a special committee of five to consider the bill. At the first hearing before the committee the osteopaths are reported to have had matters all their own way. At the second meeting the medical profession was represented by Chairman Taylor of the Legislative Committee, Drs. Preble of Chicago and Mammen of Bloomington. and active and well directed effort was made to kill the bill. It is now up to the profession, and we doubt not that they will at once see their representatives and let them know their views.

As far as we can learn there are not more than 500 osteopathic practitioners in the state and 40 per cent. of these are women. That the members of the legislature would pass a bill of this character on the demand of 300 voters, against the wishes of not less than 9,000 voters, we do not believe is possible. We say nothing at this time of the vicious character of the legislation asked. Numbers usually count more than anything else with the average politician.

HOTELS AND RATES FOR ANNUAL MEETING.

Newcomb Hotel, headquarters, American plan, $2.50 to $3.50.
St. James, American, $2.00.
Hotel Moecker, European, 75 cents to $1.00.
Wood's Hotel, European, 75 cents to $1.00.
Franklin House, European, 75 cents to $1.00.
Occidental, European, 75 cents to $1.00.

All the above hotels are on the car lines and adjacent to the place of meeting. In addition to the above, about 100 guests will be accommodated in the homes of the local profession of Quincy. All who come will be accommodated either in the hotels or in the private homes of the city. Kindly send in your reservations and state whether you would like to be accommodated at one of the hotels or in a private home. Dr. L. H. A. Nickerson is chairman of the Committee on Hotels.

The local Committee of Arrangements has provided for a bureau of information both at Hotel Newcomb and also at the church, where all sessions of the society will be held. There will also be free messenger service and telephone service for members of the state society.

The Elks' club rooms, corner of Sixth and Maine Streets, the home of the Adams County Medical Society, will be thrown open to the members of the society.

Plans are maturing for a river excursion and boat ride on the evening of May 19, and this promises to be one of the most enjoyable features of the convention. Appropriate entertainment for the visiting ladies will be arranged for.

The excellence of the program to be presented at the Illinois State Medical Society in Quincy, May 18-20, should attract the largest attendance in the history of the society. The plans of the local committee at Quincy will provide pleasing and most enjoyable entertainments. Begin to make your plans now to be present.

Correspondence.

DR. J. WHITEFIELD SMITH, COUNCILOR, WRITES A STRONG LETTER INDORSING THE TEXAS RESOLUTIONS.

BLOOMINGTON, ILL., March 1, 1909.

To the Editor:—Replying to yours of the 19th ultimo, in which you ask for an opinion respecting the conclusions reached by the Board of Councilors of the State Medical Association of Texas in regard to the resolution adopted by that body relative to the ethical nature of the practice among some physicians and surgeons of dividing fees, giving and receiving commissions, paying rebates and other material remunerations or compensations, without the knowledge of the patient, for referred business, particularly between the specialist and the general practitioner, would say that I heartily approve and endorse the action of the Council of the State Medical Association of Texas in this matter for the following reasons:

First.—That I believe in reciprocity among the members of the medical profession, which in no way does violence to one's conscience or the code of medical ethics, neither compromises the dignity nor the integrity of any of the individuals concerned; yet I do believe that all mercenary methods employed for securing patients for consultation, treatment or operative procedure, at the hands of the disposing practitioner, is unethical and needs only to be mentioned to be condemned.

Second.—That the spirit of commercialism which has crept into the profession and which has been tolerated so long by its members is, to a certain extent, responsible for the charlatanism, empiricism and the unreasonable and unwarrantable pretensions to skill, among some of its members; and, furthermore, toward these unjust practices, has encouraged rather than hindered an uneducated and unqualified coterie of laymen to assume the duties and responsibilities of a trained and learned profession, and to practice the healing art upon an indiscriminating public, for none other than mercenary and selfish motives.

Third.—Because the practice of medicine and surgery is a profession, and under no circumstances must it be considered a trade. All of the boastful features of advertising in the press, the giving of premiums for business, unjust and unreasonable charges in order that rebates may be given, or profits divided, certainly places the profession in the position of the latter, which not only degrades the profession but debases the member who indulges in the practice.

The profession of medicine is not on the same plane with a trade. What would apply to a trade as perfectly honorable and legitimate may not apply at all to a profession, and whoever uses the method of commercialism in securing a practice is unworthy of the confidence reposed in him by his patients and is undeserving of the respect of his colleagues.

Yours very truly,

J. WHITFIELD SMITH.

HOMEOPATHY—BEGINNING OF THE END OF.

To the Editor of THE JOURNAL:—Please permit me to state a few facts and to ask a few pertinent questions.

A recent publication issued by authority of the American Institute of Homeopathy gives the total number of homeopathic graduates for the year 1908 as 243. There are, I think, 18 so-called homeopathic colleges, giving an average of 13 graduates to the college. Some of these colleges, I observe, no longer dwell upon their sectarian tenets and teachings, but rather enlarge upon those branches which are generally accepted as forming the basis of every rational medical education. One institution has dropped the word "homeopathic" from its title and assumed a new name in no way suggesting sectarian teaching.

Homeopaths are entering the medical profession by the hundreds. A few years ago a strong homeopathic college was forced to close its doors because it was made public that many, possibly a majority, of its professors were sending their sons to regular institutions. There are a few scattered journals of trifling circulation and declining influence that profess to be homeopathic, but there is not one that can lay claim to anything more than mere local influence. Most of these publications are supported by some college or commercial interest.

Is there a single so-called homeopathic college in America whose income from students is sufficient to pay its running expenses?

How many professed homeopaths are to-day sending their sons and others to regular colleges?

How many practitioners are to-day openly proclaiming their sectarianism?

The fact is, homeopathy as a fashionable fad is worn out. It is a back number. Candid men of all schools see it and generally are free to admit it, privately if not openly. The reason for the general smash-up of sectarian medicine is easy to see. The immense strides made by the regular profession in all branches of medical science have been noted

and accepted by the hard-headed, practical people of the country. In this great evolution homeopathy has been swallowed up and forgotten.

I believe there should be systematic effort made to gather in the scattered homeopaths into the ranks of the medical profession. The great stumbling block will be a so-called "homeopathic" diploma, to which some short-sighted regulars foolishly object. There ought not to be any squeamishness on this head. To every such practitioner I would say, "Come in with us; all of us have a great deal yet to learn about medicine; if you have anything good we want it; you have always been welcome to all that we have in the way of knowledge; stop running a poor side show and join us in the main tent."

I do not sign this letter because I do not wish to arouse the slightest personal feeling. In the little city where I live there are Drs. Blank, father and son. The son is a regular. The father calls himself a homeopath. Meaning no possible reflection upon the father's sincerity, I am able to see no difference whatever between his methods and those of his son. I mean no self-compliment when I say that their medical work is fully as successful as my own. The son is kept out of the society because of his association with his father. For my part, I would take both of them into the fold, when the last would be heard of the old gentleman's "homeopathy." He would soon forget all about it.

There are, in my judgment, hundreds of capable, experienced men who would be glad if some one would say to them, "Bring on your 'pathic' sheepskin and say no more about it. The more you associate with progressive men the sooner you will forget all about past follies."

Some bright morning homeopathy will wake up and find itself dead. In the meantime I believe that its progressive elements should be warmly welcomed into the ranks of regular medicine. Not only welcomed, but urged to drop a name that means nothing, to give up no honest principle, to abandon no sincere belief, merely forsake something that has outlived its usefulness.

PHYSICIAN.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular March meeting of the Adams County Branch was held March 8, at the usual time and place, President Henry Hart in the chair. Others present were: Drs. Bierne, Pitman, Miller, Gabriel, Bearman, Pfeiffer, E. Zimmermann, Groves, Rice, Knapheide, Baker, Ashton, Meyer, Haxel, Brenner, Kidd, Knox, Koch, Center, Becker, Christie, Jr., Lierle, Johnston, W. W. Williams, Shawgo, J. B. and Kirk, Robbins, Collins, Knapp, Ericson, Gilliland, Nickerson and Wells. Visitor, Dr. McKim, of La Belle, Mo. A communication was read from Dr. J. R. Pennington, of Chicago, in regard to his lecture and clinic on April 12, and the society extended also an invitation to Dr. Paul Gronnerud to visit Quincy at the same time and hold a surgical clinic. The application of Dr. L. P. Peters, of Clayton, was received and referred to the censors. The idea of holding a joint meeting with the ministers of the city to discuss the Emmanuel and kindred movements was not favorably considered. Adjournment to the Hotel Newcomb was then had for luncheon. After which Hon. W. H. Govert, the attorney of the medical defense for this district, was introduced and addressed the society on "The Medical Practitioner's Duty to the Courts, and on the Witness Stand." For over an hour and a half the speaker held the close attention of his hearers, and his replies to questions and inquiries at the close of his discourse were most illuminative and instructive. He clearly showed by citation of cases passed upon by the Supreme Court of this state that the physician must testify even as an expert in cases where he has been summoned, though no provision has been made, or contemplated, for remunerating him as an expert witness. That all physicians were regarded as experts and their knowledge could be demanded and compensated by the tender and payment of the ordinary witness' fees. That coroners had no right or authority, unless specifically endowed with such by the supervisors of their county, to order inquests upon dead bodies with promises to pay the physician for the work. In regard to the physician on the witness stand, advice was given him of the danger and fallacy of relying upon authorities in medicine. As a witness he should tell what he himself knows, briefly, and avoid the danger of trying to explain his answers. Never be afraid to say, "I don't know." In regard to malpractice suits Mr. Govert was of the opinion that physicians themselves are responsible for the most of them, which are started by unwittingly giving opinions on cases in reply to questions from a fellow practitioner's patient. He held that physicians should be more careful in this regard, and that if they did so malpractice suits would almost cease to be started. The address was very instructive and enjoyable, and at its conclusion the speaker was given a vote of thanks, and in addition thereto was elected to honorary membership in the Adams county society.

CLARENCE A. WELLS, Secretary.

ALEXANDER COUNTY.

The regular meeting of the Alexander County Medical Society was held February 26, at Cairo, with the President, Dr. Cary, in the chair. There were present Drs. Bondurant, Clarke, Davis, Dunn, Dodds, Dickerson, Fields, Hibbets, McNemer, Rendleman and Walsh. Dr. Henry Davis reported a case of placenta prævia centralis, with recovery of mother and child. The discussion following was very interesting and was participated in by Drs. Bondurant, Clarke, McNemer, Cary and Walsh. Dr. Clarke reported a case of complete inversion of uterus protruding beyond vulva, immediately following parturition. Dr. Wilson

of the U. S. Marine-Hospital Service, an honorary member of the society, reported an unique case of precipitated labor. The Board of Censors reported favorably upon the application of Dr. E. E. Gordon, following which he was elected to membership in the society. Dr. Bondurant read a report of a case of mastoiditis, as follows:

Mrs. G. B., aged 27, married. Saw her first Jan. 13. Had been ill three or four days with acute ear trouble, which from history was quite severe. Temperature at 6 p. m., 104; pulse, 120; respiration, 25; severe pain in left side upon coughing or deep inspiration and they suspected pneumonia, so they said, and gave that as reason for calling me. Left ear was discharging pus. Whole left half of head sore and severe pain in ear and mastoid region, swollen and red back of ear. Deep pressure over antrum and tip elicited characteristic mastoiditis. I failed to find lung or pleural infection, but that side of neck and chest seemed to be in sympathy with head trouble. Gave acetyl salicylic acid and codein internally. Frequent syringing of ear with warm water (every half hour, if needed) and instilled boric acid and cocain after such irrigation.

I asked for an operation to be done next morning. She had been delirious at intervals, had rigors and irregular temperature. I believe I state the truth when I say unfortunately she rested much better that night, and, being afraid of surgical work, refused to even go to the hospital next day. Acute symptoms—pain, temperature and swelling fluctuated, with some general improvement for three days, and she came to my office once. I still insisted upon operating, though swelling over mastoid had subsided largely. I knew mastoid cells were infected from pressure, producing pain, especially at two points (over antrum and tip), profuse discharge and expression of distress. Sunday evening, fifth day of my attention, she suddenly became unconscious, and remained so about 45 minutes, gradually regaining consciousness. Pupils slightly dilated, with left probably the larger, and responded to light very imperfectly. Pulse weak and rapid, respirations about normal frequency, but shallow and irregular. This alarmed the family sufficiently to accept surgical procedure, which, assisted by Drs. Rendleman and Walsh, I did next morning, Jan. 18.

We did what is known as "the modern complete mastoid operation." Made incision from below tip of mastoid to above upper attachment of pinna, keeping about ¼-inch back of pinna. Second incision backward from opposite external auditory canal about one inch length. Chisel and gouge were used to enter the antrum, which proved to be unusually large, with chambers almost completely separated. Pus everywhere from tip cells to those at base of posterior root of zygoma.

The entire bone work was done, after entering cavity, with ronguer and curette, and not a spongy vestige left, so far as we could determine, including tip and those at root of zygoma. Suturing done with silkworm and chromicized gut. First dressing was with oiled silk adapted to the walls of the cavity packed with iodoform gauze. The upper half of the pinna lost its sensibility, which is gradually returning. This was due to division of (I think) the auricularis magnus, a branch from the cervical plexus. The wall of the canal which contained the facial nerve was plainly seen, but not disturbed. The flexure of lateral sinus was a little more conspicuous than the average and we were forced to pass slightly to rear of same before all spongy bone was removed. The periosteum (I might say, technically speaking, endosteum) covering the thin inner plate of skull at middle upper part of cavity was destroyed and the delicate sentinel between her brain and this army of death dealing germs was weakening and has had a hard battle in repairing the damage. The progress has been slow, but very gratifying. Infection principally diplococci, some staphylococci.

March 2. The bone surface has completely granulated and healing will be more rapid. Temperature evening before operation was 104. Pulse 120. Morning of operation temperature 103; pulse 110. At noon and evening of same day temperature 101 and pulse 100, after which temperature never was above and seldom to 100.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, Jan. 6, 1909.

A regular meeting was held Jan. 6, 1909, with the president, Dr. Alfred C. Cotton, in the chair. Ernest Lackner read a paper entitled "The Milk Supply of Copenhagen—The Only Proper Supply in the World." The paper was discussed by Charles S. Bacon, G. Koehler, I. A. Abt, Rosalie Ladova, W. H. Cheney, J. H. Hess, Caroline Hedger, Alfred C. Cotton, and in closing by the essayist. Caroline Hedger read a paper entitled, "Physical Examinations of Below-Grade Children,"* which was illustrated with numerous stereopticon views. Discussed by Rosalie Ladova, J. H. Hess, I. A. Abt, Alfred C. Cotton, and the discussion closed by the essayist.

DISCUSSION ON THE PAPER OF DR. LACKNER.

Dr. C. S. Bacon:—This description of the Copenhagen Milk Supply Company is important chiefly to us practically in comparison with our own milk supply in this country and in this city. It seems that this company supplies two kinds of milk—infant's milk, and the general supply of milk. Infant's milk is more carefully prepared than the general supply. For instance, the cows are tuberculin tested. This infant milk can well be compared with the certified milk supply in this country. All present here are more or less familiar with the certification of milk in America. It was started about sixteen or seventeen years ago by Dr. Coit, of Newark, New Jersey, and since then medical milk commissions, founded on the model medical milk commission of the Newark County Medical Society, have been instituted in twenty-five or more cities in this country. The milk, to which the term "certified" is given, is produced under conditions essentially the same as those of infant milk in Copenhagen, there being only a few changes in details. For instance, filtration is generally effected through sterilized gauze and cotton. The milking is done in pails, not of the kind that have been recently used in Copenhagen, but in pails that have been carefully arranged. There have been many tests made as to the best form of pails. The essential idea here is to get the milk cooled as quickly as possible.

Recently I visited a plant in Pewaukee, where I saw the milking begun, and followed it from the first milk which was poured into the cans. There were a number of milkers on both sides of the stables. The milk can is filled in a few minutes. It is taken to the house, filtered and cooled, and in eighteen minutes from the time the milking began the milk came out of the cooler at 40 degrees and was bottled. The milk later on may be bottled within ten minutes. When milk is produced in this way it is not essential to have a special milk pail like that described to-night.

The general supply of milk is to be compared with our general supply. I do not know just what proportion of the milk of Copenhagen is supplied by this milk supply company, but other companies furnish milk, perhaps not as good as that of the milk supply company. It is possible in smaller cities to get a milk that is fairly pure, fairly safe, but I doubt whether that is possible at the present time in our large cities, particularly cities the size of Chicago and New York. I think we have made and are making a great improvement in carrying out the plan that has been recently adopted in the city. There has been a remarkable improvement in the milk supply in Chicago in the last twenty years or more, even where there was no inspection, and absolutely no control; but gradually, more and more, we are becoming able to control the situation. There has been greater progress in the last two years than all the rest of the time put together, and I believe that the conditions existing here have been carefully considered by the Health Department in the method that has been adopted. There is danger in tubercle bacilli; there is danger in other disease germs. Whether tubercle bacilli

*For text of paper see page 433.

pass through healthy udders or not into the milk, it is true that there is a good deal of danger from other sources. Our new regulations provide that this danger at least can be met by pasteurization.

Dr. G. Koehler:—I have listened to Dr. Lackner's paper with a great deal of interest, and I have learned a great many things from it. I am personally very much obliged to him for presenting such a complete report on the Copenhagen milk suppply, because in our work in connection with the milk supervision we hear a great deal, from time to time, about the milk supplies of Copenhagen and of Buenos Ayres. There is one point that particularly interests me, that is, whether the milk supply Dr. Lackner has described as the milk supply of Copenhagen is really the milk supply that is furnished by this one company (which supplies the largest part of the milk there) or whether the regulations he has spoken of are municipal regulations, applied to all handling or producing milk. This milk supply is ideal. It is interesting to know that it has taken a long time to get it, and that there has been a gradual process of evolution, going through the stage of pasteurization, as I am informed that some five or ten years ago the milk supply of Copenhagen was pasteurized and was heated much higher than we heat so-called pasteurized milk in this country, so that the cream did not rise. In other words, the cream line was destroyed. It has seemed to me that it was not necessary to heat milk as high as that in order to destroy tubercle bacilli, and, I am sure, that we would have great difficulty in this country if we required that milk be heated to 176°, because then the milk delivered would not show the usual amount of cream. It is interesting to note the way these improvements have been brought about in the milk supply through the efforts of one company. That is also true of the milk supply of Buenos Ayres, a certain company requiring these things of the farmer producing milk, then selling as cheaply as possible to the consumer in the city, and naturally others had to follow in line. An arrangement of that kind would do a great deal toward improving our milk supply here. I had a talk with Mr. Roach, of the Neill, Roach Dairy Co., in Louisville, a short time ago. They are purveyors of certified milk. Their certified milk in Louisville is handled entirely by this one company. They make contracts with farmers in the country to deliver a certain grade of milk, which we may call aseptic milk, such as the milk spoken of by Dr. Lackner, and we find that this milk is pretty hard to get. I firmly believe that it is possible to produce this aseptic milk in a much cheaper way than we are producing it here in the neighborhood of Chicago. We have a number of millionaires who are engaged in this business, and they have milk houses and bottling establishments that cost thousands of dollars. When we take farmers to these establishments they get scared; they think that this is something absolutely impossible for them to do. The Neill, Roach Dairy Company has taken one farm after another, and at the present time they have five or six, and have demonstrated to the farmers that so-called aseptic milk can be produced in cheaper establishments. We do not need to have barns that are plastered and calcimined, but we can produce this milk in much cheaper barns. We do not need to have milk houses that are lined with tiling, or bottling establishments with floors of tiling. We know that aseptic obstetrics is and can be practiced in the hovels on the west side, just as well as in the best equipped hospitals. The production of this aseptic milk is growing through the efforts made by this company. They are paying the farmer at the present time eight cents a quart and are selling it for twelve. If the city authorities would go out and demand all of these things, the farmers would object and probably would go out of the milk business. In the first place, we have too many producers to deal with to get a milk supply which will correspond with the milk supply of Copenhagen. It must be a gradual process of evolution, to be successful. In Buenos Ayres they have reached the stage of universal pasteurization. We have not reached that stage, but we are getting into it now. A few words about pasteurization. I do not believe in pasteurization, but in certi fied milk. I do not believe in pasteurization of milk that is produced in the manner described by Dr. Lackner; neverthless, I would ask one question: Why do they pasteurize milk produced in the manner described, that is delivered to infants? I do not quite understand that.

When it comes to the milk supply of large cities, it is a matter of choosing between two evils. We have the conditions to contend with as we have had them in this city. In order to produce milk in an aseptic manner, it is necessary to see the twelve thousand farmers supplying the city with milk, and a large number of them are not in the milk business; they are in the manure business. All the farmers in the southern part of the county keep a few cows, not principally to make milk, but manure for their farms. They will not be bothered about doing these things, and I believe they would sooner go out of business than produce milk. Of course, they will be driven out of business gradually. This should be done at once, as a large number may be led to make the necessary improvements and in the long run come out as producers of first class milk. Then pasteurization of the general milk supply may become unnecessary. In Chicago we think this will be five years from now.

Dr. Isaac A. Abt:—I want to emphasize one or two points brought out by Dr. Koehler. In the first place, certified milk or "fancy" milk is produced at great expense, and it seems almost useless to hope at this time that certified milk will become universally used. Owing to its high price it is intended more for the privileged class or people of means. The large majority of people, and the large majority of babies raised in a large city like this, must be fed on the ordinary market milk.

I must take issue with the essayist relative to pasteurized milk. While I am not an advocate of pasteurized milk, nevertheless I think there can be no doubt but that ordinary market milk should be pasteurized. There is no argument necessary in support of this. Everyone will concede the fact that ordinary raw milk, as it is brought into the market, contains pathogenic micro-organisms, and whether it contains tubercle bacilli or not, we know such milk is responsible for epidemics of typhoid, scarlet fever, diphtheria, etc. Therefore, our advice should be to pasteurize such milk on a large scale. What is the clinical evidence in support of pasteurizing such milk as I have mentioned? It has been abundantly demonstrated by Budin, who has a maternity in Paris, that during the many years pasteurized milk has been used, he has reduced materially the mortality in maternities and infant hospitals throughout Paris. Again, all through Germany there are milk stations where pasteurized milk is distributed. There are separate stations where pasteurized milk is distributed, and the babies are thriving much better on it than on the market milk.

Lastly, I would refer to some interesting experiments that have been carried on by Dr. Emmet Holt, and Dr. Park, of New York, who made a census of the babies that have been fed on various milks supplied to and used in the city of New York as infant food several summers ago. They examined the morbidity and mortality records of babies fed on condensed milk, certified milk, etc., and the lowest mortality and lowest degree of morbidity occurred among the babies who were being fed pasteurized milk. If a baby can be given fresh certified milk it is desirable to do so. On the other hand, it is much more desirable to give pasteurized than ordinary market milk which teems with bacteria.

Dr. Rosalie Ladova:—I have been very much interested in Dr. Lackner's paper, but would like to know a little more about how the bottles are prepared. I do not think enough attention has been paid to the corking of the milk bottles. It is all right to have aseptic milk, if possible, but it does not always reach the consumer in an aseptic state in this city, as I know from observation and experience. The milk bottles of the Borden and Bowman companies are sealed or covered with circular paste board, and around these bits of circular paste boards are crevices sufficiently large for dirt to get in. I find I always have to wash the side and top of the milk bottle because it is always dirty. I spoke to the milkman about it, who said they keep these bottles on ice, and quite often the ice is not free from dirt. This year, when they did not have ice, the bottles were just as dirty. I think it would be well if these bottles could be better protected.

Dr. H. W. Cheney:—I am very glad to have heard this paper by Dr. Lackner. Dr. Koehler has called our attention to the point that improvement in the

Copenhagen milk supply has been a process of evolution; it has been a matter of years, and I believe that we in Chicago are going through this same process of evolution. We are getting better things right along, and probably there has been more improvement made in the last two years than in all the previous history of the milk supply of Chicago, and I think the time will come when we will have a milk supply here that will equal that of Copenhagen. Already steps are being taken to form a medical milk commission which will certify to the certified milk to be sold here, so that we shall have a certified milk such as physicians can depend upon.

Dr. J. H. Hess:—One thing that is open to criticism is the method of reporting contagious diseases. It strikes me as a rather unscientific way of reporting these cases by asking boys who deliver milk to assist the city in finding out contagious diseases in the families to whom they deliver milk, and in neighboring families they hear about.

With reference to supplying milk to babies, I think some remarks from our president (Dr. Cotton) would be very pertinent, as he has made efforts to supply milk of good quality to babies in the Jackson Park Sanitarium, being stimulated in his efforts by the endeavors of Dr. Evans. In order to get a good fresh supply of milk from cows, we were encouraged by the South Park Board, who furnished a stable, and some members of the society assisted in procuring cows. But unfortunately it was late in the season, and the only place we could get a stable was in Washington Park. We also had difficulty in finding an experienced milker, so that after a short period we had to give up the idea for the summer.

Dr. Evans thinks it is possible to keep cows in the city of Chicago. He said that there are some eighty thousand horses in the city, while there are less than ten per cent. of that number of milch cows. He believes that by doubling the milch cows in the city it will be possible to feed babies on fresh milk. As I have stated, we tried the experiment, but met with some handicap. Perhaps next year we may be able to do better.

Dr. Caroline Hedger:—With regard to the remarks made by Dr. Hess, we had the same cow; she was milked by a peasant woman for $2.10 a week. This cow supplied seventeen families with milk for convalescent babies. We taught a simple method of pasteurization, heating the water in the pan to boiling, with the can of milk inside. Another peasant sterilized the cans in the mornings when they were brought in. The neighbors took to pasteurization easily. Of the seventeen families that were supplied with milk from this cow, there were no babies lost.

Dr. Alfred C. Cotton:—I want to say a word or two about that cow. I knew her. She gave an abundance of good milk. I got three quarts of milk from this cow one time, a portion of which I drank myself, and my family drank the rest of it, although it was not considered fit to give babies, on account of the unhygienic care given to it. A bellboy at the Del Prado was employed at 75 cents a day to milk this cow. He could not do it, so he gave a sheep-herder, who had charge of a flock of sheep, one-half the money if he could milk the cow. Unless great care is used in handling the milk before it reaches the consumer, we can not expect good milk for babies, milk that is germ free. While this particular cow gave good milk, we had to let her go merely because we did not have the facilities for her care. She cost us nothing. The feed cost nothing. The only expense was the elevator boys, $1.50 a week. Although we only had the use of and milk from this cow for fifteen days, it undoubtedly saved several lives. Those who remember the death-rate will recall that we had but four deaths after this red cow, although we had nine or more deaths before it. Some of us know that the milk supply before that was not only not above suspicion, but dangerously filled with pathogenic organisms. This red cow was a missionary, in that the milk people who supplied milk knew they were in competition with the real thing in the form of this cow, and their milk improved after this and the death-rate fell off.

With regard to pasteurization, I want to say in all earnestness that if pasteurization obtains in the city of Chicago we will have taken a long step backward in the milk problem, and it will take us a couple of decades to get over it. Perhaps there is no man in Chicago who is better informed on the milk question than Dr. Abt, yet he for some reason favors the pasteurization of milk. Of two evils, we should choose the lesser, and if we want to select certified milk, all right. As has been stated by Dr. Lackner, great good has been done in this city during the last two years with regard to improving our milk supply. During this time we have noticed a marked improvement, and if we put our shoulders together and back up the City Health Department and work for legislation which will insure the veterinary surveillance of cows, throughout the city and state, and proper compensation for destroyed animals paid to the farmers by the state, we will have eventually a good milk supply, and when we open the doors to frauds, to carelessness and neglect, that will come with pasteurized milk, it will be a sad day for us.

Dr. Lackner (closing the discussion):—The Copenhagen Milk Company supplies 40,000 people with milk, and has sold from eight to ten million litres of milk yearly. There is a little pasteurization done because physicians ask for it. Simply heating milk at a temperature of from 178° to 185° does not pasteurize it. The milk is not thoroughly heated. You have to have a special apparatus in order to pasteurize milk, and it must be stirred and brought in contact with the heating process. Milk that is pure should not be pasteurized. I had occasion to watch the whole process of preparing milk before shipment in one large establishment. We asked a laboratory man as to the percentage of bacteria found at the receiving station in milk, and he said from one hundred thousand to three hundred thousand per c.c. We looked at the pasteurizing institution, and, among other things, asked how long it took to pasteurize milk, and we were told one minute. We were shown how the vessels were sterilized in a large milking establishment. A large container was washed in a vat of water, after which it was taken out and put over a steam-pipe. They did not have enough steam to sterilize cans when milking. Even though the milk is pasteurized, it will not kill all the germs in it. To pasteurize milk one needs an expensive apparatus, and it is only the rich man who can afford to get the various machinery for carrying on this work. The smaller men, those who are not so rich, will eventually have to go out of business. They can not pasteurize the milk, and the larger firms, who are doing this business, will have to be watched closer than a cat watches a mouse. It all costs money, and even then we can not guarantee that milk will be pasteurized. If you are going to heat milk at a temperature of 178°, it will be necessary to keep this temperature up for fifteen or twenty minutes, in order to pasteurize milk. It seems to me, the whole process of pasteurization is wrong because it can not under any circumstances be enforced. I am sure, with the energy Health Commissioner Evans has developed, and with the work he is doing, if the public will stand back of him and support him, he can bring about a great improvement in our milk supply and force these people to furnish good milk. The big dealers will do it, but they say they are helpless unless the farmers take a step to improve the milk supply.

Dr. Caroline Hedger read a paper entitled "Physical Examinations of Below Grade Children," illustrated by numerous stereopticon slides.

DISCUSSION ON THE PAPER OF DR. HEDGER.

Dr. Rosalie Ladova:—I wish to congratulate Dr. Hedger on her excellent paper, as it not only shows the careful and good work of an intelligent physician, but a social worker as well. How much can be learned and known in this line, it is hard to say, but the work is very commendable, and there is nothing like trying.

Dr. Isaac A. Abt:—I have enjoyed Dr. Hedger's paper very much, and during its reading one or two points occurred to me. For some time I have been impressed with the idea as to whether we had a reliable standard for judging

physical and mental development in children. Of course, we measure the height and take the weight; but it is a question whether these are reliable standards, or whether they represent exact standard of development. For two or three years I have been studying the question of what children should be sent to kindergarten and what children should be kept at home, having in view their physical development, to say nothing of their mental development. I have found that children who seemed tall enough and weighed pretty well were unable to stand the strain of kindergarten work. What is eminently desirable would be a better standard of development. Rotch has done some work along this line. He has made *x*-ray pictures of the wrist bone and has studied the development of the bones of the forearm, of the wrist, and of the hand, but just how these investigations are going to turn out, no one is in a position at present to know.

With reference to the frequency of cardiac findings, we are continuously confronted with the various forms of murmurs and cardiac changes, not only in children of the poorer classes, but in children of the luxurious class, and no one has presented as yet a satisfactory analysis of the pathological conditions that underlie these cardiac changes. It is true some of them are anemic murmurs; some of them are rheumatic, inflammatory affairs, and not a few, I think, are of myocardial origin or due to dilatation from strain. This is a chapter in cardiopathies of children which has still to be written.

Dr. Alfred C. Cotton:—If any one will take pains to round up a lot of boys, eight or nine years old, and put them through a vigorous racing for a prize for five minutes, and then examine their hearts, it will be astonishing how many cardiac murmurs will arise. If he will pick out children that are anemic, feed them afterwards and watch them, he will be astonished to see how many murmurs will disappear on a good diet, with perhaps a little tonic.

Dr. Hedger (closing the discussion):—I am not sure of the exact nature of the heart findings in these cases, that is why I put them in a tentative way. I was not sure in every case that a transmitted murmur meant an inflammatory or rheumatic condition. I was glad to hear the suggestion of Dr. Abt regarding a myocardial condition. I have not considered that as thoroughly as I ought to have done. Anemia and intoxication were so apparent the possibility of myocardial degeneration from general malnutrition was overlooked.

Regular Meeting, Jan. 13, 1909.

A regular meeting was held January 13, 1909, with the president, Dr. A. C. Cotton, in the chair. "The Fresh Air Treatment of Surgical Tuberculosis," by Brainerd Hunt Whitbeck, of New York City. Discussed by J. Ridlon, E. W. Ryerson, Carl Wagner, and the essayist, in closing. "Fracture of the Carpal Scaphoid," by Allen B. Kanavel. Discussed by M. Reichmann, M. R. Barker, B. H. Whitbeck, C. A. Parker and the essayist. Adjourned.

DISCUSSION ON THE PAPER OF DR. WHITBECK.

Dr. J. Ridlon:—Last March I had the pleasure of visiting the Sea Breeze Hospital. It was a cold day, so cold that some of the visitors went around with their ears covered, and overcoat collars turned up. The children were going about without any extra covering, the windows being open and the wind bowing in strong enough to ruffle one's hair. The children gave no evidence of being cold. They were undressed and put to bed and seemed to enjoy the cold. They seemed to be in remarkably good health. I was so enthusiastic that I wanted to start an outdoor institution here, and another on the sea coast for private patients. The most I have been able to do has been to put the children having fever at the Home for Destitute and Crippled Children out on the roof. I tried to get them out last March, but failed to persuade the superintendent to believe as I did, and it was not until summer that the plan was carried out. When the cold weather came they were put indoors again, but they sleep in rooms with south windows and the windows are kept open half way. The steam is turned on and the rooms are fairly warm.

There can be no question about the advantage of the open air treatment of surgical tuberculosis and of the location of a hospital at the sea coast. While listening to the reading of the paper I wondered whether it is not necessary for these cases after they are healed by the outdoor treatment to continue their existence out of doors, in order to prevent a recurrence. I wish the Doctor had shown more fully the final results in his cases a year or two after they left the hospital.

Fresh air is beneficial in the treatment of these cases, but it is by no means the only essential factor in the treatment, any more than is medicine or surgery, or anything else. We see cases that receive no treatment whatever that do just as well as do the cases that receive the very best treatment and of the latter, some terminate fatally, in spite of all treatment and efforts to produce a cure. I have in mind now the case of a little boy in New York whom I saw many years ago. He had sacro-iliac joint tuberculosis; his older sister had hip-joint tuberculosis; his father died of pulmonary tuberculosis. His mother was a washerwoman and they lived in two rooms, one light, the other dark. The little girl had received treatment, but had not done very well. The litttle boy got no treatment at all. He was confined to these two rooms, crawling around on the floor, and resting in bed alternately. During the summer time he would spend considerable time at the open window. He was not kept particularly clean, he wore one shirt a week, and this would become saturated with the pus from the sinuses. Every Saturday his mother gave him a bath and a clean shirt. I watched that boy for three years, wondering how soon he would die. He got well. That is an illustration of what may occur in tuberculosis.

More than twenty years ago I showed at the New York Academy of Medicine a series of joint cases and read a paper on syphilitic joint disease. Every orthopedic surgeon said that there was no such thing as a syphilitic joint disease. One man said that he always treated tuberculous joint disease with mercury and iodid of potash, and that this treatment cured tuberculosis. Therefore, I was very much interested in that part of the Doctor's paper referring to this subject. We have demonstrated that patients suffering from so-called syphilitic joint disease, inherited or personal syphilis, give a typical tuberculo-opsonic index. This means that either the opsonic index is not reliable or that the so-called syphilitic joint disease is really tuberculosis grafted on to syphilis.

The greatest thing about the Sea Breeze Hospital is the enthusiasm of the doctors and the surgeons and of the nurses. If we could always have this same enthusiasm in the treatment of all of our cases the results would be far better than they usually are.

Dr. E. W. Ryerson:—The most important point in the paper, one with which most of us are familiar, is the value of fresh air in the treatment of these cases. No doubt other methods are also of importance, but not to the same extent as is fresh air. However, it is difficult and sometimes impossible to use fresh air properly in the average hospital. At the Cook County Hospital last summer in the Children's Ward, we succeeded in having awnings put up so that the children could remain outside all day. Every child improved, as was apparent on inspection. The same thing is being done at the Children's Memorial Hospital. Two large balconies are employed for the purpose and the children are kept out there, with the result that they exhibit a uniform improvement.

As to whether children will always have to be kept in the fresh air the remainder of their lives is a matter of great importance. I think we will find that a child cured of tuberculosis will have a recurrence unless it is kept out-of-doors all the time. Of course, we can cure the child again, but the best results will be obtained by instituting a campaign of education, showing the public the necessity of fresh air in tuberculosis and after a cure has been effected.

Dr. Carl Wagner:—I am very much pleased to have listened to the valuable paper of the essayist of to-night. It may not be out of place in this connection to do honor to the man who was the father of the seaside hospitals, Professor Monti. This great friend of the suffering children not only taught the benefit of

seaside air but built out of his own means a hospital at the Adriatic Sea after failing to find financial support from others.

Dr. B. Fischer is the first one to study the ocean air scientifically. In his treatise, Thalassotherapie, in 1894, he proved that the air became purer as one traveled seaward, but absolute purity was not reached until about one hundred miles from shore. According to this the islands of Nantucket and Catalina must be considered as the advantageous ones and Madiera the best place for this and also for other reasons.

The use of the syrup ferri iodid, as recommended by Lauter-Brounton, has been a routine practice with Pott and Henoch for many years previous. They departed from the idea that in many of these cases, especially the obstinate ones, an inherited syphilitic basis might have to be taken in consideration.

Dr. Whitbeck (closing the discussion):—As to following up these patients after they are discharged from the hospital: In October, 1907, we looked up all the cases discharged since the summer of 1904. We located about 95 and succeeded in examining about 76. Ten children had died of general tuberculosis. Of the 76, a large number lived in the country, where they had been placed through the efforts of the association, their parents moving from the city or the children being adopted by farmers. There were no recurrences in these cases. The children that lived in the city were in good physical condition, although they were not as well nourished as when they lived in the hospital. There had been no recurrence of the disease in these cases.

In regard to syphilitic joints: We do not want to be over-enthusiastic, but we must be on the lookout. Many of our cases had had good orthopedic treatment before they came to us, but failed to show any improvement. The Sea Breeze Hospital was established for tuberculous cases, and if the cases that come to us are apparently not tuberculous, but can be healed with potass. iodid and mercury, we want to do it. If we can not prove that these are cases of hereditary syphilis, the fact remains that mercury effects a cure after all other efforts directed at curing tuberculosis had failed.

Dr. Max Reichmann:—In looking over my records I found nine cases of fracture of the carpal scaphoid, all in the right hand, and all due to cranking an automobile. In seven of the cases there was also a fracture of the radius. These fractures are discovered oftener now than before, because the Roentgen ray is used for diagnosis. Ten years ago text-books hardly mentioned these fractures. The most unusual case I ever saw was one of solitary fracture of the navicular bone of the tarsus. It is absolutely necessary to examine every case of injury of the foot or hand with a Roentgen ray, because the so-called sprains may be serious fractures of bones either of the carpus or the tarsus.

Dr. M. R. Barker:—For a number of years I have been trying to collect data on which I might base a conclusion as to the frequency of fracture of the scaphoid as compared with fracture of the other carpal bones when the force applied was less potent than that which produces a crushing injury. I succeeded in collecting about twenty-five or thirty such cases, and found only four or five in which there was fracture of any other carpal bone due to such injuries. I believe that the position and shape of the scaphoid may account for its more frequent fracture. It is on the outside of the carpus, and enters into the formation of the wrist joint. It articulates with the radius above, and with the trapezium and trapezoid below. The latter two bones articulate with the metacarpals of the thumb and first finger. In falls where the hand strikes violently, as when a Colles fracture is produced, the force is exerted on the thumb and finger first, and is then conveyed directly to the scaphoid. The scaphoid is really a long bone; it has a head, a shaft or neck, and two tuberosities. Fractures usually occur in the shaft or at the point of least resistance. I believe that fracture of the scaphoid will be diagnosed more often as we resort more frequently to the Roentgen ray for diagnostic purposes.

Dr. Brainerd Hunt Whitbeck, of New York City:—I want to call attention to the line of ossification in the scaphoid which shows so frequently in *x*-ray

plates. Make a radiograph of any case of hand injury, and one will often find this line, which may be mistaken for the line of a fracture. To overcome this I always take a picture of both hands. Then one can tell at once whether it is the fracture line or the line of ossification, because these two bones are always identical in one individual.

Dr. Charles A. Parker:—Several years ago I examined 250 skeletons, but failed to find a single case of fracture of the scaphoid. I would like to ask Dr. Kanavel to tell us what is the appearance of these fractures after union has taken place.

Dr. Kanavel (closing):—The radiographs I showed were taken about two months after the occurrence of the injury, and none of them showed the line of ossification as seen ordinarily.

Regular Meeting, Jan. 20, 1909

A regular meeting was held Jan. 20, 1909, with the president, Alfred C. Cotton, in the chair. The subject for the evening was a symposium on syphilis. Papers were read as follows: 1. "The Value of the Spirochæte in the Diagnosis of Syphilis, with Special Reference to the Primary Lesion," by B. C. Corbus.* 2. "Serum Diagnosis," by W. J. Butler.* 3. "Dermatology," by James Nevins Hyde.* 4. "Congenital Syphilis," by Isaac A. Abt.* 5. "Therapeutics," by William L. Baum. The symposium was discussed by M. Herzog, F. G. Harris, W. T. Mefford, William Allen Pusey, O. S. Ormsby, Daniel R. Brower and Louis E. Schmidt. Adjourned.

DISCUSSION OF THE SYMPOSIUM ON SYPHILIS.

Dr. Maximilian Herzog:—I fully agree with Dr. Corbus that it is important to find the spirochæte in the primary and secondary lesions of syphilis as a means of early and certain diagnosis. However, I do not agree with him when he says that the only safe means of diagnosis is the new dark field illumination. Schaudinn, in 70 cases of primary and secondary syphilis, which had little or no treatment, found the spirochæte 70 times in stained preparations. In 50 cases of the same type Sabernheim found the spirochæte in every case. Mulzer found it 20 times in 22 syphilitic cases, and Geraghty reported last December from the Johns Hopkins Hospital that in thirty cases he had found the spirochæte 27 times.

I was the first one in Chicago to take up the examination of syphilis by the aid of staining for spirochætæ in a systematic manner, and that was done in July and August, 1906, after my return from the Philippine Islands. I examined material from about thirty cases, which was furnished by Dr. L. E. Schmidt. Of that number of cases seven were negative. These cases were either recognized as soft chancres, and were merely used as controls, or later on were found to be soft chancres. Of the remaining twenty-three, I found eighteen primary and secondary lesions, and those cases in which I did not find spirochætæ were cases which had been under mercurial treatment for some time. So a good deal depends upon the experience of the investigator in finding spirochætæ. I can not agree with the statement made by Dr. Corbus, that by the dark field illumination the character of spirochætæ are so absolutely separate, we can be certain what we are dealing with, because I found in a case which I held for a long time to be gumma of the lung, spirochætæ which were exceedingly fine, and of which I have photographs here. So I can only say, I fully agree with Dr. Corbus that it is important to find spirochætæ, and they can be found; but the dark field illumination is not the only method, and we have a reliable method in the staining method. Furthermore, I may say of the dark field illumination, it does not require such an elaborate large arc lamp as some use, but I have fixed up a simple apparatus recently which consists of a three-candle power incandescent

*For text of papers see pages 383, 388, 402 and 405.

light, which has a wire inside, with ordinary reflector, and a little lens in front of it, and with this you can find spirochætæ very easily.

In conclusion, the staining method is just as reliable as the dark field illumination, provided you are sufficiently conversant with it.

Dr. F. G. Harris:—Dr. Butler has given a very good exposition of the Wassermann reaction. As you see, he is an enthusiast. The more one works with the Wassermann test the more enthusiastic one becomes. As Dr. Butler did not take up the technique, I shall not discuss that phase of the matter further than to say that it is complicated and it is necessary to control every step. There are some sera which alone bind complement. This property may be original in the serum or it may be due to the fact that the serum had been heated too high in inactivating it as shown by Bruck. In either of these conditions, if it were not for our controls we would conclude that such a serum was syphilitic.

While there have been several methods brought forward to simplify the test, none of them are reliable, so tnat the reaction as originally enunciated by Wassermann is the only reliable method at present. As to the value of the Wassermann reaction, we may say, all things being equal, that the longer the disease has persisted the stronger the test.

Taking up the various stages of syphilis and the value of the test in those stages, Dr. Butler has told you that he obtained a positive reaction in 90 per cent. of the cases of primary syphilis. That per cent. means that the majority of his cases were examined in the late primary stage. The longer the chancre has been present the more likely are we to get a positive reaction. It is probable that a positive reaction in primary syphilis depends on a dissemination of the infection. If we examine cases very shortly after the onset of the chancre, the majority of the cases will be found negative. So the Wassermann reaction is not a reliable test for primary syphilis, the only absolute method of diagnosing the chancre is by the demonstration of the spirochæte pallida.

In secondary syphilis the reaction is positive in practically 100 per cent. of those cases with symptoms. Cases without symptoms, that is, in the so-called latent cases, 50 per cent. gave a positive reaction. In tertiary syphilis 90 to 98 per cent. of the cases give a positive reaction. Ninety-five per cent. of the cases of paretic dementia and 70 to 80 per cent. of the cases of tabes give a positive reaction.

It is surprising what a large number of people there are who are laboring under the delusion that they have or have had syphilis. This syphilophobia is due to the fact that some physician, on insufficient grounds, has diagnosed a suspicious ulcer as a chancre or a skin eruption as a syphilid. After taking a certain amount of treatment they stop and come to us with all sorts of complaints and delusions. The Wassermann reaction is of immense help in clearing up these cases.

With the exception of the discovery of the spirochæte the Wassermann reaction has done more than any other one thing to enlarge our knowledge of syphilis. It has shown us the mother and child, who, according to Colles' and Profeta's Laws, are immune to syphilis, are so because they have syphilis and a positive reaction in these cases is an indication for anti-syphilitic treatment.

Syphilographers very early recognized the immense value of the Wassermann reaction. Its relation to the other branches of medicine has hardly been appreciated. It is a most valuable help in all branches of medicine and surgery. Cohen, of Berlin, has reported a series of eye cases, in twelve of which the reaction was such as to enable him to make a diagnosis of syphilis. Karewski has shown the value of the reaction in surgical affections, especially in obscure forms of arthritis, jaundice and other hepatic conditions.

Our own experience has shown the great value of the test in renal, cardiovascular and other internal diseases. At the Cook County Hospital we have recently had a case of acute syphilitic endocarditis in which the diagnosis was made by help of the Wassermann reaction. There are probably a large percentage of cases of endocarditis which are of syphilitic origin and which early in the

course, before the pathologic changes had become marked, would have responded to specific treatment.

Frankel has shown that a large number of aneurysms are of syphilitic origin. The so-called Heller's aortitis has now been demonstrated to be a syphilitic affection.

The Wassermann reaction also, we believe, will play a large part in the treatment of syphilis. All cases should be submitted to intermittent tests for the Wassermann reaction and that reaction should be made negative and kept negative. This is the only means we have at present of showing the presence or absence of active syphilis and by controlling our treatment by means of this test and keeping our patients in a state of a negative reaction for the entire period of anti-syphiltic treatment, it would seem that we were pursuing the most logical method of accomplishing an absolute cure of the disease.

Dr. W. T. Mefford:—There is one point which Dr. Butler failed to mention in his paper, and that is, in examining the milk of syphilitic mothers the milk in some shows a positive reaction to the serum diagnosis. In some young infants afflicted with syphilis, which exhibit no signs or symptoms of syphilis, they show positive reaction, while others, the new-born syphilitics, which show no signs or symptoms, would show a negative reaction.

As to syphilitic milk, I am not satisfied as to whether it would transmit syphilis to a non-syphilitic child. I have been unable to follow up this part of the diagnosis for lack of material. I have not been able to follow out in cases in which I have examined infants to see whether children born of syphiltic mothers do not all show syphilitic manifestations at a later period. I would like to examine more of these syphilitic mothers' blood and milk, as well as the blood of the new-born, and will make those examinations gratuitously to establish the fact of heredity or the transmission of syphilis through the milk.

The diagnosis is of special value in treating syphilis. It certainly shows some people accept treatment more readily than others, or that syphilis is more virulent in some than in others. In some people the serum reaction will disappear in from 75 to 85 inunctions, while in others it will take from 130 to 150 inunctions. It will also show that some people who have been treated according to the customary methods of three years' course, that in less than one year they will give a positive reaction, others in five, ten and fifteen years. I examined one after twenty years who was just beginning to show active syphilis.

As pointed out by Drs. Butler, Baum and Harris, these examinations should be made at least once a year, or at the farthest once in two years, to see if syphilis is active. It is a guide to treatment as well as to prognosis.

Dr. William Allen Pusey:—I have nothing to add to the very vivid description of the types of syphilides which Dr. Hyde has given. Indeed, I rather envy the sharpness and clearness with which he has described these various pictures of cases of syphilis. I am afraid, however, that in the very vividness with which he has described the capriciousness and irregularity of some syphilides, he will unwittingly convey the impression to some minds that syphilis as a rule is capricious and unusual in its course. If there is one thing we have to be thankful for in syphilis it is the regular way in which syphilis, as a rule, pursues its course. Infrequently we have so-called tertiary lesions occurring in the secondary period; very rarely we have some manifestations corresponding to those which we call secondary, occurring late in the course of active syphilis; but, thanks be to the gods of clinical medicine, syphilis as a rule shows a regular chronological sequence in the development of its symptoms and we are not often confused by a disturbance in this sequence. It seems to me also that the hearer is apt to get from Dr. Hyde's emphasis of the confusion in diagnosis, which sometimes occurs in these cases, an overestimate of the difficulty in recognizing the cutaneous manifestations of syphilis. Surely mistakes do occur from failure to recognize the syphilitic character of lesions, particularly the ulcerative lesion or later syphilis, but I venture to suggest that these mistakes as a rule are due in the vast majority of instances, not to the obscureness in the manifestations of syphilis, but

to failure to recognize the presence of the plain manifestations of the disease. I believe the fact to be emphasized is that cutaneous syphilis, while it may occasionally seem confusing, is as a rule most definite and sharp in its manifestations.

Dr. Oliver S. Ormsby:—The few remarks I shall make will relate to the cutaneous manifestations of syphilis and they necessarily will have to be brief.

Dr. Hyde pointed out the fact that insignificant early manifestations of the disease are sometimes followed by more or less serious results. I should like to refer to some practical examples illustrating this fact. Several years ago a patient was referred to me who had an ulcerating lesion of the penis supposed to be carcinoma. My duty in the case was to decide which of two proposed therapeutic measures would be preferable, surgical procedure or *x*-rays. The lesion was a gummatous syphiloderm and potassium iodid with mercury soon entirely relieved the patient. The first diagnosis was rendered largely on a negative history of syphilis early in the patient's career.

Another patient with no history of an initial lesion and no secondary manifestations presented the following history. In 1892 he had one testicle removed surgically for a supposed tuberculous condition. Three years later the other organ was removed in a similar manner for similar reasons. Four years later a large so-called tuberculous ulcer was extirpated from the patient's leg. Some time later he developed what was supposed to be lupus vulgaris of the face, and after suffering with this for two years I first saw the patient. He then had a typical tubercular syphiloderm which was relieved very soon with the usual treatment. The scars on the leg were typical of syphilis and I have no doubt about the fact that the entire chain of symptoms were due to syphilis.

When the question of diagnosis in syphilis is before us the age and social position of the patient should not bias our opinion. Several years ago a patient, an elderly man, appeared at the clinic of Rush Medical College, exhibiting a typical macular syphiloderm. He had just recovered from a surgical operation in which the penis had been amputated for a supposed carcinoma which in reality was an initial lesion of syphilis. The patient's age had much to do with forming the opinion in the minds of his first medical advisers.

We are frequently told that owing to the social position of the patient syphilis is out of the question. This is not a valid objection and should have no weight, as this disease affects every social grade and accidental infections often occur in unexpected places. From 5 to 10 per cent. of initial lesions occur extragenitally. These lesions are found on the lips, tonsils, fingers and other areas and are frequently confusing, and one should always be alert and when a "cold sore" remains unusually long or other apparently simple infection persists and slowly enlarges, an initial sclerosis should be thought of. Recently in Dr. Hyde's practice I saw two patients each with extragenital chancres and in each the lesions were multiple.

Concerning the regularity of evolution as to time of the lesions in syphilis, it is well for one in his early studies to get the old classical description of the disease as divided into stages, but as time passes and cases multiply, the exceptions become so common that one has to practically eliminate from his mind the idea that this marvelous disease progresses with regularity through various stages.

Dr. Daniel R. Brower:—I wish to endorse the remarks of Dr. Church and to emphasize the fact that we would not have as much tabes and paretic dementia if a longer time were given to the treatment of syphilis in the beginning. I am sure the great majority of cases come to us without adequate primary treatment. When are we going to find out what additional factors are necessary to develop upon a syphilitic foundation tabes and paretic dementia? As soon as we have found that out, I believe the prospect for tabetics and paretic dements will be brighter. It is a most interesting observation that among certain peoples paretic dementia is practically unknown. In the Hospital for the Insane at Honolulu I failed to find a case of general paresis among the native Hawaiians,

and I had the same experience in the Hospital for the Insane at Tokio, notwithstanding the fact that syphilis prevails to a greater extent in those countries than it does here.

Dr. Louis E. Schmidt:—In the light of our modern knowledge of the etiology and diagnosis of this disease, it will not be out of place to say a few words in regard to prophylaxis. Metchnikoff inoculated a large series of monkeys. A second series inoculated in the same manner, place, time and virus was immediately treated with his calomel ointment. In practically every instance did these control cases show signs of syphilis, while those treated with calomel ointment never showed signs of inoculation at any period. Taking this matter into consideration, why not advise it? I certainly have done so and hope that it will be advised more generally. As to its efficacy in man, it can not be vouched for, but with the experiments before quoted it certainly should be seriously considered.

I can recall that twenty years ago it was taught to use the ordinary mercurial ointment following a suspicious exposure. This was entirely from an empirical therapeutical point of view. Now, our knowledge of the spirochæte pallida and Wassermann serum reaction permits of positive investigation.

As to modern methods of treatment, I will mention the treatment of syphilis with extract of initial lesions. Spitzer has just described twelve cases thus treated, each with ten or twelve injections. In all instances secondary rash was present. In one instance no recurrence, but at end of three years apparently a reinfection, i. e., another initial lesion with all secondary signs and symptoms following. This line of treatment is probably more of a novelty and is as yet not established.

Arsenic has commenced to assume a place in the treatment of syphilis. Uhlendorf was the first to note the effect on the organism in "sleeping disease." From analogy it was advocated in syphilis. From what has been written, it requires immense doses to stop the course of syphilis. It apparently causes an increased phagocytosis, and in this way the spirochæte pallida is exterminated. Mercury, as is known, undoubtedly kills the organism, and therefore acts in an entirely different manner. On account of the differences of opinion as to the exact dosage of the various arsenic preparations, their mode of inhibition and also of the many bad reports, I agree with Dr. Baum that it is not yet advisable to take up the treatment of syphilis with arsenic. I also agree with both Drs. Church and Baum as to the length of treatment. Even with the Wassermann serum reaction in mind, it can be stated that our knowledge is not complete as to whether or not treatment is to be discontinued, even if the reaction is constantly negative. In some instances the serum reaction is negative following three to six months' mercurial treatment. Now, if it remains negative, is all treatment to be discontinued? I wish to state that at the present time and the state of our knowledge that it is not justifiable to stop—but to continue the treatment in just the same manner as before our knowledge of the Wasserman reaction. Further investigation and time will answer this very important point.

*PHYSICIANS' CLUB OF CHICAGO AND CHICAGO MEDICAL SOCIETY.**

Meeting, Jan. 27, 1909.

A joint meeting was held at the Grand Pacific Hotel, Wednesday, Jan. 27, 1909, with Dr. Henry B. Favill in the chair. The subject for the evening was a symposium on "Eugenics." Prof. W. B. Castle, Harvard University, Cambridge, spoke on "The Experimental Study of Heredity, Illustrated with Lantern Slides." Dr. R. R. Gates, University of Chicago, spoke on "Studies of Inheritance in the Evening Primrose," his remarks being illustrated with lantern slides. Dr. Eugene Davenport, University of Illinois, Urbana, discussed "Important Lessons to be Learned from the Breeding of Animals." Dr. W. L. Tower, University of Chicago, detailed his experiments and observations on the modification and control of inheritance, which were illustrated with lantern slides. The discussion was opened by Dr. C. O. Whitman, University of Chicago, and Dr. Charles L. Mix.

---

*For text of papers and discussions see pages 406, 412 and 415.

CHICAGO SURGICAL SOCIETY.

A regular meeting was held Dec. 4, 1908, with Dr. M. L. Harris in the chair.

THYROIDECTOMY FOR EXOPHTHALMIC GOITER.

Dr. Alexander Hugh Ferguson reported a case of exophthalmic goiter occurring in a girl, 22 years of age, in which there were present, in an exaggerated form, all the typical symptoms of this affection. The disease had been present for about five months, the exophthalmos first attracting the patient's attention. Several years previously the girl had suffered quite severely from abdominal cramps. A severe general pruritus and excessive sweating were marked symptoms. The pulse rose as high as 142. Although the patient had a most voracious appetite, she had lost about twenty pounds in weight during the existence of the trouble. A thyroidectomy was done, and the result was a most astonishing one, the symptoms disappearing rapidly within a few days. Even under conditions tending to cause mental excitement there was not the slightest evidence of muscular tremor, which, before the operation, had been quite pronounced. The patient gained over twenty pounds in weight during the first month after the operation.

DISCUSSION.

Dr. A. J. Ochsner believes that there is no class of surgical cases which deserves so careful a selection as this. All the cases he has had have been diagnosed over and over again and apparently cured repeatedly, so that from a surgical standpoint the surgical diagnosis does not depend so much upon the diagnosis of Graves' disease as it does upon an operable condition of the patient. If a patient recovers only temporarily under internal treatment he becomes at once a surgical patient. If a patient is beyond the point of temporary improvement by rest and hygienic treatment, then his condition is very serious, and in the author's experience, when he has had one of these advanced patients recover from the operation of thyroidectomy, the benefit has not been great because the blood, the heart, the nervous system, and all of the other tissues of the body have suffered to such an extent that their restoration is impossible.

Regarding anesthesia, he would say that the method he has employed for a long time consists in anesthetizing the patient very slowly with ether, using the Esmarch mask, or the chloroform mask, and dropping the ether very slowly upon this.

Dr. H. M. Richter referred to the choice of cases, and said that in his limited experience he has seen two patients carried over a long period of time by medical care and who became most marked examples of hyperthyroidism, so that one of them died of hyperthyroidism without operation within a period of less than ten days after the onset of the attack. In the other case the patient, before going to operation, passed through a period in which extensive edema developed from the cardiac failure before she was gotten in a condition for operation. It seems to him that one cannot say the mild cases are the ones for medical care, and the more severe ones for surgical care.

He suggested the use of rectal anesthesia for thyroid cases of all kinds.

Dr. Dean D. Lewis said, in considering the operative statistics of exophthalmic goiter, it is necessary to differentiate between the primary and secondary types. The primary cases, those in which the symptoms develop almost simultaneously with the enlargement of the thyroid gland, are the ones which are followed by the highest mortality. The secondary cases, those in which the exophthalmic symptoms develop upon an old, pre-existing, colloid, parenchymatous or cystic goiter, can be operated upon without a much greater mortality than accompanies operations upon a simple goiter. He emphasized the fact that in many of the primary cases of exophthalmic goiter the capsule surrounding the gland is exceedingly delicate and often veil-like. This is one thing that renders thyroidectomy so difficult in these cases, for it may be very hard to enucleate the

gland from its connective tissue covering and preserve the posterior capsule. This is especially true when the gland is but little enlarged.

Dr. A. I. Bouffleur, in referring to the mental condition, said that his own personal experience has been that in those patients who are fairly wild from intoxication a radical operation is contraindicated, but fortunately in these ligation of the blood vessels will reduce that toxic condition, and in the course of a few days, or perhaps not for a few weeks, one can resort to a radical operation with safety.

The author is partial to local anesthesia in operations for goiter. He has had the experience of operating six times in one family for goiter, three of them having been of the exophthalmic type. There were two sisters. He did the operation in one under ether, the other under local anesthesia, on account of a distorted trachea.

TREATMENT OF TETANUS.

Dr. William Hessert said that the tetanus toxin forms a firm union with the motor nerve cells of the cord and medulla. The toxin reaches the cord by way of the motor nerves. A portion enters the nerves in the region of the wound, another portion enters the general circulation, and enters the motor nerve endings throughout the body. That portion which passes up the shortest motor nerves produces the first clinical symptoms, namely, trismus. Once in the nerves and cord no remedy can reach the toxin to neutralize it or break up its combination with the nerve cell. Antitoxin, no matter how administered, can reach only such portion of the toxin still free in the tissue juices, outside of the nervous system. Therefore, the many different methods employed for the administration of antitoxin have no advantage over the subcutaneous or intravenous method of injection. Combined with the free administration of antitoxin and other general measures, the injection of magnesium sulphate by lumbar puncture will tide many cases over to a favorable termination.

DISCUSSION.

Dr. L. L. McArthur said that as long as we let the condition go until the development of the nervous symptoms before making a diagnosis, just so long will we be handicapped in our treatment of this disease. He divided the subject of the treatment of tetanus into that of incipient tetanus and terminal tetanus, the one hopeful, the other very hopeless. If the facilities are not at hand for making cultures of the secretions from the wounds in which tetanus would be likely to occur, then treat the case as tetanus just as you would treat a case of diphtheria before cultures are made. If we are suspicious of the case being one of diphtheria, give antitoxin; so in the case of tetanus we should follow out the proper surgical procedures.

As to the use of balsam of Peru, we have gotten back to it because it contains the best known organic antiseptic—cinnamic acid, cinnamic alcohol. This acid and this alcohol have an efficacy as to the killing of bacteria equal to bichlorid of mercury, one to one thousand, but with this advantage, that cinnamic acid and cinnamic alcohol are slowly soluble in water.

Dr. D. W. Graham believes that in the case of wounds in such conditions the surgeon should exsect the infected tissues extensively, where a wound involves a finger, a toe, or superficial part of the body, where this can be done, and he has always advised it so as to make it a cleaner wound. In this way we get rid of some of the infective bacteria that continue to develop toxins in the wound.

Dr. Daniel N. Eisendrath said it is very essential to impress upon the general practitioner the fact that the tetanus bacillus is present from the beginning in these cases, and that it is unnecessary to wait for the paralytic symptoms before we can hope to do something. He fully believes in a routine radical treatment and disinfection of such punctured wounds, whether received from blank cartridges or from rusty nails. He invariably anesthetizes these patients and removes all necrotic tissue, applying thereafter carbolic acid and alcohol. He

makes it practically a major operation under anesthesia, and, putting on a constrictor, he cuts away all the necrotic or blackened tissue he can see, in order to get a freshened wound surface. He follows this up immediately with regular systemic treatment, namely, tetanus antitoxin.

Dr. D. A. K. Steele protested against the spirit of pessimism which seems to prevail in the treatment of the later cases of tetanus. Admirable results have been obtained by the proper early treatment of suspicious wounds. The World's Fair construction opened our eyes as to the possibilities of prophylaxis in the treatment of tetanus, and Dr. Plummer deserves credit for calling attention to that; but the experience of Italian surgeons in southern Italy, in Naples particularly, and the experience of many American surgeons as to the efficacy of saturating these patients with normal salt solution, who have developed trismus, who had the late symptoms of the disease, have been so satisfactory, and with an increasing percentage of recoveries, that he thinks we all should be just as strenuous in carrying out the saturation of these patients with normal salt solution as we would in carrying out prophylactic treatment in the initial cases.

Dr. Louis A. Greensfelder reported a case of a child who developed tetanus following an ordinary vaccination. In another instance tetanus followed circumcision. In a third case tetanus followed a double amputation for a crushing injury, one a little above and the other below the knee. In another case recently seen, where there was no apparent external evidence of injury, after examination a punctured wound was found at the end of the finger, due to a fish-bone, showing it is not always easy to resort to prophylactic measures because of the nature of the wound and the manner in which the tetanus organism was introduced.

Dr. M. L. Harris said they have carried out the prophylactic treatment of tetanus for some time at the Alexian Brothers' Hospital and have not had a case of tetanus develop in the hospital that they have had an opportunity of treating prophylactically. As to the use of sulphate of magnesia, he has used it now in three cases, two of which recovered and one died. The one that died was a little boy, brought into the hospital with tetanus, and he saw him a short time after his arrival; gave spinal injections of 3 c.c. of a 25 per cent. solution of sulphate of magnesium. All spasms disappeared, but the boy died unquestionably from heart failure. Of the other two cases that recovered, one received several injections into the spinal canal, and every injection was followed by immediate cessation of the spasms. When it became apparent that the spasms were returning he was given another intraspinal injection. He was one of the very acute or fulminating cases that has recovered. The other one was a more chronic case, treated by several injections of sulphate of magnesia, and recovered.

He believes that the treatment of tetanus must resolve itself into preventing death from the spasms until the patient has time to break up the combination of the toxins with the cells and eliminate them. The sulphate of magnesia stops the spasm, and if we can use the right amount of it he believes we can prevent the spasms and thus give the patient time to break up the combination and recover.

CHICAGO GYNECOLOGICAL AND CHICAGO SURGICAL SOCIETIES.

A joint meeting was held Jan. 22, 1909, with Dr. Henry F. Lewis, President of the Chicago Gynecological Society, in the Chair.

NEPHRECTOMY FOR PERSISTENT HEMATURIA.

Dr. Samuel L. Weber showed a kidney removed from a woman, 41 years of age, on account of persistent hematuria, which could not be controlled in any other way. The extreme upper pole of the kidney disclosed an anemic infarct, and it is thought that hemorrhage came from one of the papillæ of the kidney.

ARTERIOSCLEROSIS OF THE UTERUS.

Dr. Weber showed a uterus removed from a woman 40 years of age. She had had six or seven children, several abortions before, and a year ago had a miscarriage at four months, and since then has had menorrhagia. He removed the uterus by the vaginal route, applying two clamps to each broad ligament.

LONG AND LARGE APPENDIX.

Dr. Carl Wagner showed an appendix nine inches long which he had removed from a woman, 55 years of age, who had not been sick except three days before the operation. The appendix was about the size of the index finger and contained four stones.

Dr. Wagner also exhibited a specimen of carcinoma of the clitoris removed from a woman of 52. The disease involved the left vulva, as well as glands. The glands were removed with the clitoris.

MULTILOCULAR CYST OF THE OVARY.

Dr. Henry F. Lewis showed a ligament as the result of a ventrosuspension of the uterus. The patient was a woman, 26 years of age, married four years, and had never borne any children. Three years ago she was operated on, the operation consisting in sewing the uterus forward to the abdominal wall. At the time the report was made the appendages were said to be normal. She had very few symptoms of any trouble until three or four months before she came to him. She had had three menstrual periods, amount of discharge being greatly diminished in each. She had nausea, increased micturition, with other symptoms indicative of pregnancy. Examination disclosed a soft tumor as large as an orange on the right side. The left side was apparently negative. The uterus was retroverted, bound down to the posterior part of the pelvis by tight adhesions which could not be absolutely freed. There was no motion of the uterus by bimanual manipulation. Operation did not disclose ectopic pregnancy, but an ordinary multilocular cyst of the ovary, which was removed with the tube, which was closely connected with it. The interesting point was the specimen of elongated artificial ligament running from the abdominal wall in the median line a few inches above the pubes to the fundus of the uterus, and which was found far back in the depths of the pelvis. The ligament measured five inches and a half.

ANEURYSM OF THE AORTA.

Dr. Arthur Dean Bevan presented a patient, 28 years of age, fireman by occupation, who gave a history of a specific lesion dating back ten or twelve years. Within the last year and a half patient has developed a large aneurysm at the junction of the ascending with the transverse part of the aorta, and patient came to him the first part of December suffering much pain. He was unable to move his right arm, he could not lie down and sleep, and there was an absence of radial pulse in the left arm. He had a good *x*-ray picture taken, first, to show the exact location of the aneurysm, and then, with the assistance of Dr. Dean Lewis, he wired it on the 10th of December. A gold trocar was inserted on the outside to the right of the median line, to a distance of an inch and a half, but he did not get it into the aneurysmal sac. Then he withdrew it and introduced it a little to the left of the median line, about two inches, when blood began to trickle drop by drop slowly from the trocar. He then introduced fifteen feet of gold wire through the trocar and applied about thirty cells (about 50 milliamperes) of electricity, the positive pole being applied to the wire and the negative to a large lead plate, upon which the patient rested. The current was passed through the wire for about three-quarters of an hour. The process was not very painful. When the current was first turned on the patient could only stand about thirty milliamperes; this was gradually increased to forty, and finally to fifty milliamperes. There has been a marked improve-

ment. Pulsation is no longer noticeable in the sac. Pain has disappeared entirely. The patient can move his right arm, but was unable to do so when he came on account of pain. He can lie down in the recumbent position and sleep with comfort. In addition to this treatment, for a short time after the wiring of the aneurysm the patient was placed upon small doses of iodid of potassium.

GUNSHOT WOUND OF THE LIVER, RIGHT KIDNEY, LEFT LUNG, OF THE HIP; TRAUMATIC ANEURYSM OF LEFT SUBCLAVIAN; OPERATION; RECOVERY.

Dr. A. E. Halstead:—This first patient, an Italian, aged about forty, was admitted to St. Luke s Hospital on Nov. 2, 1908, after being shot from behind a short time before. Five shots were fired at him, four of which took effect. The first entered the tenth interspace on the right side, three inches from the median line behind, and passed completely through the body, penetrating the chest wall, pleura, lung and liver, breaking its exit in front through the sixth costal cartilage about three inches from the median line, The second entered just below the twelfth rib, two inches from the median line on the right side, and penetrated the right kidney, passed in front of the ascending colon, and lodged in the muscles of the abdominal wall. The third entered the right hip on a level with the upper margin of the great trochanter and passed downward and out three inches above the knee, on the internal aspect of the thigh. The fourth passed through the upper part of the left scapula, upward, and through the scapula, apex of left lung, and out in front. The wound of exit made by this bullet was just below the clavicle at a point corresponding to the junction of its outer and middle thirds. The wound of entrance was about two inches from the median line and just below the spine of the scapula.

On admission, about thirty minutes after the shots were fired, the patient was suffering from the effect of the loss of a large quantity of blood. There was no radial pulse. His bladder was full of blood, as was his abdominal cavity. The abdomen was immediately opened through a right rectus incision, and found filled with fresh blood. The wound in the liver could not be reached until the lower costal cartilages were cut and retracted upward. The wound of exit of the bullet in the liver was large enough to admit the tips of three fingers; from this the blood spurted in large jets. By passing the fingers underneath the liver the wound of entrance was located. To control the hemorrhage an attempt was made to utilize the greater omentum to plug the opening. This was found inadequate, and a yard of iodoform gauze was drawn through the liver, from before backward. This, with the omentum, which was plugged into the large, flaring wound of exit, controlled the hemorrhage completely. The abdominal cavity was partially cleared of blood, when the wound leading from the kidney was seen. From this blood flowed freely into the peritoneal cavity. The wound in the anterior abdominal wall was closed, the patient turned on his left side, and the kidney exposed by a lumbar incision. A large tear was found in the kidney, extending from the convex surface through just below the hilus, and opening the pelvis. The condition of the patient did not justify a nephrectomy. The hemorrhage was therefore controlled by packing with iodoform gauze. During the operation the patient was given a quart and a half of salt solution, containing a dram of 1-1000 solution of adrenalin. A hurried examination of the patient before taking him from the operating room revealed the presence of fluid in both pleural cavities, and a hematoma of small size beneath the skin around the wound of exit of the bullet that penetrated the left side of the chest. The bladder was irrigated, removing a large quantity of fluid and clotted blood. Patient returned to the ward with a fairly good pulse of 160.

The progress of the case was extremely satisfactory for ten days. A small quantity of bloody urine escape from the kidney wound during the first three days. The gauze packing in the liver was removed on the third day and for it substituted a small tubular drain. Excepting at the point of drainage, the

abdominal wound healed by primary union. The tubular drain was removed from the liver on the eighth day. On the tenth day the patient complained of a feeling of numbness in his left hand. The night preceding he had coughed violently and had expectorated a good-sized clot of blood.

Examination revealed a swelling, pulsating and expansile, just below the left clavicle and extending in the axilla. At this time the swelling was about the size of a small orange. The pulse was absent from the left radial. This tumor increased rapidly in size. The hand was distinctly cooler than the opposite and the feeling of numbness was increasing. At the end of forty-eight hours, in spite of compression, the tumor had nearly doubled in size. There was a distinct bruit to be heard over the swelling, which still retained its expansile characteristic. The diagnosis of aneurysm of the left subclavian, probably beginning at its *outer third*, was made, and ligation decided upon.

On the twelfth day after the injury the operation was performed. The usual incision for ligation of the three portions of the subclavian was made. Difficulty was encountered in finding the artery. To facilitate this three inches of the clavicle was resected. In making an attempt to ligate the vessel the aneurysmal sac was ruptured. This was followed by a profuse hemorrhage, which was controlled by plugging the proximal portion of the artery with the left index finger of the operator. It seemed inadvisable, owing to the condition of the patient, to attempt to ligate the vessel proximal to the aneurysm, so an eight-inch forceps was passed along the index finger in control of the hemorrhage and clamped on the proximal portion of the vessel. The distal portion was ligated and the aneurysmal sac opened freely, the clots turned out, and the cavities packed with gauze.

The forceps were removed from the artery on the third day following. Gangrene of the hand and forearm followed, necessitating amputation at the elbow.

After this the patient rapidly recovered and is now out of the hospital.

GUNSHOT WOUND OF LEFT CHEST, PENETRATING THE PERICARDIUM, DIAPHRAGM AND SPLEEN; SPLENECTOMY, AFTER SUTURE OF PERICARDIUM AND DIAPHRAGM; RECOVERY.

This second patient, a man, 34 years of age, was admitted to St. Luke's Hospital on Oct. 5, 1908, *in extremis*, suffering from a self-inflicted gunshot wound of the left chest. The weapon used was a cheap 38-caliber revolver. The bullet wound was just below the lower margin of the third costal cartilage and half-way between the mammary and midsternal lines. On examination the patient appeared to be *in articulo mortis*. No radial pulse could be felt. On auscultation over the precordia only the faintest heart tones could be heard. The thorax was rapidly opened through a curved incision below the fifth costal cartilage. A flap of soft tissue with fifth and fourth costal cartilages was turned up after the cartilage had been divided at both ends of the incision with a bone forceps. The pericardium was exposed. A wound of the pericardium, an inch in length, extending down and back through its lower part, was found. Below a wound that would admit four fingers was found in the diaphragm; through this the greater omentum had become dislocated and had entered the pericardium. After removing the omentum and a few clots of blood the pericardium was sutured with fine catgut.

Through the lid in the diaphragm blood flowed freely from the abdominal cavity; the thorax was cleaned of blood, and the diaphragm sutured from its convex side with a running suture of Pagenstecker linen.

The abdominal cavity was then opened through a left rectus incision, and the spleen explored. This was found broken into several fragments. The lower costal cartilages (6 inches to 7 inches) were cut in line with the abdominal incision and reflected outward, giving ready access to the spleen, which was removed after ligating the vessels at its hilus. The fundus of the stomach had been deeply grooved by the bullet cutting through the peritoneal and muscular coats, but apparently not opening this viscus. This wound was closed

by a running suture of linen, and the blood in the abdominal cavity was removed and the wound closed by interrupted through and through sutures of silkworm gut. No drainage. Patient made a rapid recovery without any untoward symptoms, which could be attributed to the removal of the spleen. The leucocyte count ranged during the first six days from 14,000 to 18,000 and then dropped to normal. No change was noted in the lymph glands.

Dr. L. L. MacArthur had had four or five cases of simple hemorrhage of the kidney to deal with, and said in each case it was quite feasible to check the hemorrhage by opening the kidney and packing it.

Dr. A. E. Halstead mentioned a case he had several years ago in which a diagnosis of stone in the kidney was made. The woman had had profuse hemorrhages at intervals of two or three months. He opened the kidney, expecting to find a stone, but found a cavernous angioma projecting into the pelvis of the kidney, which was removed. He excised a portion of the kidney with the tumor and sutured the kidney. The patient made an uneventful recovery. He suggested cavernous angioma of the kidney as a possible source of hemorrhage.

Dr. E. Wyllys Andrews said that wounds of the diaphragm nearly always caused a traumatic hernia, and he, as well as other surgeons, had made the mistake of dealing with a number of them from the peritoneal side. Nearly every wound of the diaphragm ought to be repaired by opening the pleural cavity.

Dr. Daniel N. Eisendrath endorsed the great advantage of tamponade for gunshot wounds of the liver, and related a case in which it took twenty-five yards of gauze to control the hemorrhage. The patient recovered, barring the complication of empyema, which required opening later on.

Dr. A. E. Halstead said that in wounds of the liver, particularly of the left lobe, he has in two instances used the great omentum in gunshot wounds, plugging the opening with it. He tried this in the first case reported, but the wound was too large, and the omentum was not large enough to control the hemorrhage. It could only be controlled by gauze packing.

Dr. Emil Ries narrated the case of a man who came to him with hematuria. Cystoscopic examination showed that blood came from the left ureter, not from the right. In this case he split the kidney, but found nothing—no tumor, no stone. He decapsulated the kidney, and in three days the hematuria ceased. If he had lost track of this man he might have thought he was cured, but he returned a year later, with hematuria again. Cystoscopic examination again showed that blood came from the left kidney. He extirpated this kidney, and found no trace of a pathologic process except a hemorrhagic nephritis. The man has been well since.

Dr. William E. Schroeder pointed out that the removal of the kidney for simple hemorrhage is a procedure which is quite out of proportion to the condition, and the only exception for removing it would be uncontrollable hemorrhage after opening it and packing it.

Dr. E. W. Andrews asked whether any of the Fellows could report a case of hematuria following the use of urotropin.

Dr. Alex. Hugh Ferguson recalled one patient to whom he gave fifteen grains of urotropin, three or four times a day, after a nephrotomy for hemorrhage, because there was suppuration in the wound, and he thought it would aid materially in getting rid of the pus. Instead, however, it caused hematuria from both kidneys.

TUBERCULOSIS OF THE KIDNEY IN THE MALE AND FEMALE.

Dr. Arthur Dean Bevan said that in a series of more than five thousand postmortems three per cent. were found to have tuberculous lesions of the kidney, and of a large series of postmortems of individuals dying of tuberculosis ten per cent. were found to have tuberculosis of the kidney.

The author discussed the etiology and symptomatology of renal tuberculosis at length. Passing on to the treatment, he said that three methods have been advocated. First, the general hygienic treatment, which is employed in lung tuberculosis. Second, the specific treatment with tuberculin. Third, the surgical treatment.

General hygienic treatment is of great importance, as in all cases of tuberculosis. Fresh air, proper nutrition, and rest are of much value and should always be insisted upon.

The specific treatment with tuberculin is at present on trial, especially as advocated by Wright in very small doses, and controlled by determining the opsonic index.

Regarding the surgical treatment, we owe our present knowledge of tuberculosis of the kidney to the general surgeons and the surgical specialists, who have had the opportunity of examining tuberculous kidney and ureter and bladder in the living, and who have been able to follow these cases and watch the results of the various operations which have been undertaken for the cure of the disease. Primary nephrectomy for early unilateral kidney tuberculosis can be done with less than ten per cent. of mortality. In Kümmel's last series of 69 cases the mortality was only 2.7 per cent., and with the prospect of curing about eighty per cent. of the cases. In the light of present knowledge we must conclude that in unilateral renal tuberculosis early nephrectomy is the best treatment. This should be combined with the well-recognized hygienic treatment of tuberculosis.

In bilateral renal tuberculosis the treatment should be hygienic, plus possibly the specific treatment with tuberculin, until at least its value has been proven or disproven, and, where especially indicated, such palliative, surgical measures as nephrotomy and drainage.

DISCUSSION.

Dr. L. L. McArthur re-emphasized the fact that tuberculosis of the kidney, like the acute infections, is usually unilateral. It has been his experience to find tuberculosis of the kidney very much more frequently on the left than on the right side, and to have had it in all the cases he has had in females, instead of males, with the exception of two instances. He has been impressed with the remarkably hopeful prognosis from his experience gained in removing tubercular kidneys, for when one finds a kidney, the ureter and bladder involved in tuberculosis with the kidney he is inclined to throw up his hands and send the patient to another climate and another physician. The removal of the tubercular focus in the kidney will most frequently cure the tuberculosis of the ureter and bladder. He has observed this a number of times, that the mere removal of tubercular kidney, without doing aught for the ulcerations in the bladder, has sufficed to relieve the bladder condition. In a case in which a bilateral tuberculosis obtains, as shown by segregation of the urine and the detection of tubercle bacilli, the vaccine treatment offers as good prospects of results as any treatment yet advised.

Dr. M. L. Harris has operated on several cases of bilateral tuberculosis, with increasing favorable results. Tuberculosis of the kidney is usually a unilateral affection, and it only becomes bilateral at some more subsequent period. If that is the case, and he thinks it is, there must be a time when bilateral tuberculosis occurs, when one kidney is more extensively involved than the other, and if we get a case when the second kidney is not extensively implicated the removal of the kidney which is the more extensively involved will result in a cure. He has knowledge of several cases of this kind in which the results have been extremely favorable. A short time ago a young lady called to see him from whom he had removed the kidney on one side over three years ago. She had had extensive bilateral tuberculosis. She was still well and in a good state of health. He does not take the doleful view of bilateral tuberculosis that he formerly did.

Dr. Alex. Hugh Ferguson recalled a case of tuberculosis of both tubes, with tubercle bacilli coming from the kidneys. When the tubercular tubes were removed the tubercle bacilli from the kidneys disappeared. It is possible to have tubercle bacilli in the urine without the kidneys being involved, consequently a very careful examination should be made of the different organs to see if there is any primary tubercular focus.

Dr. A. J. Ochsner agreed with Dr. Harris that in a number of apparently hopeless cases, cases of bilateral tuberculosis of the kidney, the patients have recovered and have remained well for many years after the removal of the more extensively involved kidney. This fact has induced him to look upon these cases in a more hopeful way than formerly.

Dr. Victor J. Baccus said, with reference to albumin being found in the urine of the remaining kidney in renal tuberculosis, that some two years ago Albarran reported his experience and observation in eight cases of this type. The amount of albumin found in the urine varied from one-half per cent. to three-quarters per cent. The kidney, although secreting albumin, did not show by the urine any pathologic changes, and the patient was in perfect health. He explains this on the basis that the kidney, although not tubercular, had been injured by the toxin of the diseased kidney and had never regained its primary physiologic function.

Dr. Emil Ries said that the only case of bilateral tuberculosis of the kidney in which he obtained anything like a favorable result was one on which he operated nine years ago. In this instance there was tuberculosis of the bladder and extensive tuberculosis of one kidney. One kidney discharged quantities of pus and tubercle bacilli. From the other kidney there came turbid urine, but only a few tubercle bacilli and a small quantity of pus. He removed the badly diseased kidney with the ureter down to the bladder. The patient never had completely clear urine, but was nevertheless able to attend to her work and to enjoy life.

Dr. L. Feingold stated, in connection with Dr. Harris' remarks, that after removing the badly infected kidney the other kidney became cured after a while. He does not think the cure results from the fact of the other kidney having been removed, but that tuberculosis being a slow, chronic infection, the comparatively healthy kidney undergoes a compensatory hypertrophy and becomes accustomed to doing the work of both kidneys.

Dr. Gustav Kolischer pointed out that one of the primary symptoms in tuberculosis of the kidney is frequency of urination. This is especially true in young women and girls, and any time one finds this symptom in them, where other symptoms can be excluded, one should think of tuberculosis of the kidney. Another symptom is a change in the ureteral orifice which has a slit or a cleft in it, and where the ureteral orifice is changed in its configuration to a slit or round hole one should think of tuberculosis. This becomes a certainty if in the neighborhood of the ureteral opening ulceration or infiltration is found.

Three years ago he made a diagnosis of tuberculosis of the kidney in a young girl by draining one kidney and finding the urine infested with tubercle bacilli, while the other kidney was apparently normal. He removed the tubercular kidney, and the woman recovered, but the fistula she had never closed. He saw the same patient in consultation. The family physician thought of all kinds of extensive operations, which he did not advise. This woman was subsequently cared for by Dr. McArthur, who applied the vaccine treatment, with the result that the fistula closed inside of two weeks. He cited a similar instance.

ACUTE DILATATION OF THE STOMACH AND DUODENUM POST-OPERATIVE.

Dr. William E. Schroeder discussed the anatomical peculiarities of the mesentery and ileum, the position of the patient, and said that experimentally he has been able to produce dilatation of the stomach on cadavers by slight traction on the mesentery. In the acute cases the onset is sudden. There is vomiting,

pain, passing of flatus. Vomiting may be fecal. The abdomen is distended, especially in the epigastric region. Succussion is present. Temperature rises; pulse ranges from 145 to 160. Collapse may follow. In the chronic cases the onset is slower, but otherwise the clinical picture is the same as in the acute cases. The prognosis is bad, in that 70 per cent. of these patients die if left to themselves. Treated cases do much better. Treatment consists of rectal feeding, elevation of the foot of the bed, and washing out of the stomach every three or four hours.

DISCUSSION.

Dr. E. Wyllys Andrews said that since several members of the society have reported cases of dilatation of the stomach post-operative, and since the résumé given in 1895 of forty cases, they have all come to realize the appalling condition from its suddenness and from the fact that surgeons are more or less responsible for deaths which are preventable, not only general practitioners, but surgeons who let patients die in their hands. Perhaps sepsis plays a part in acute dilatation of the stomach, but this condition can not be distinguished always from post-operative ileus. If the condition is identically like that of post-operative ileus, clearly one can do very little harm, but may do good by washing out the stomach in every case of suspected post-operative ileus or acute dilatation.

Dr. A. E. Halstead has had two cases of acute dilatation of the stomach post-operative, both terminating fatally.

Dr. A. J. Ochsner recalled a case of gastroenterostomy for pyloric obstruction due to cicatricial tissue formation following an ulcer of the pyloric end of the stomach, the patient having apparently recovered, but two or three days afterwards, while sitting up, she suddenly complained of pressure, and immediately her pulse increased rapidly, and in an hour she was dead. Postmortem examination showed that a kink at the point of attachment of the jejunum caused closure, and the stomach crushed the heart until the patient died of pressure upon the heart. He has a standing order now that if there is any distention of the stomach, any vomiting after operations, the stomach is washed out regularly.

Dr. Lester E. Frankenthal drew attention to the absence of feces in the vomit in cases of dilatation of the stomach, saying this is one of the chief differential signs and would lead to an early recognition of the trouble.

GREENE COUNTY.

The regular meeting of the Greene County Medical Society was held in the parlors of the Illini Club at Carrollton Friday, March 19, 1909. Called to order by the president at 11:30 a. m. Roll call showed the following present: F. H. Russel, Eldred; E. G. Proctor, Kane; L. O. Hamilton, Roodhouse; James Squires, J. W. Adams, Howard Burns, E. S. Gooch, R. H. Bigger, G. W. Ross, W. F. Waggoner and J. J. Ehrsman, Carrollton; H. W. Chapman, W. C. Day, E. K. Shirley, J. W. Redwine, G. W. Burns and H. A. Chapin, White Hall. Visitor, A. E. Meisenbach, St. Louis, Mo. Very interesting and instructive papers were read by Dr. H. W. Chapman, "Purulent Pleurisy or Empyema;" Dr. A. E. Meisenbach, "Cancer of the Breast," illustrated with drawings; Dr. F. H. Russel, "Gastritis." The censors reported Kane as the next place of meeting, June 11. Essayists for Kane meeting: E. G. Proctor, Kane; C. R. Thomas and L. O. Hamilton, Roodhouse; W. F. Waggoner, Carrollton. This meeting was the best in the history of the society and we hope to surpass it at Kane and have every physician in the county present.

H. A. CHAPIN, *Secretary.*

JACKSON COUNTY.

The first quarterly meeting of the Jackson County Medical Society was held in the offices of Dr. A. R. Carter in Murphysboro, Ill., Thursday, March 18, 1909, at 1 p. m. The following were present: Drs. Molz, President, Carter, Vice-President, Grizzell, Sabine, Ormsby, Roth, Tweedy of Oraville, and Essick, Secretary-Treasurer. The following program was given: Dr. Ormsby presented an interesting genitourinary case with three external openings into the bladder due to traumatic stricture of the urethra. The doctor read a very able paper concerning the case, giving his mode of operating and after-treatment. The discussion was opened by Dr. Molz. Dr. Sabine read a well-prepared paper on Bronchopneumonia, outlining the treatment thoroughly. Discussion opened by Dr. Roth. Dr. Grizzell gave an excellent paper on Gonorrheal Ophthalmia, which was highly instructive. Discussion opened by Dr. Ormsby.

MADISON COUNTY.

The Madison County Medical Society met in the rooms of the Collinsville Business Men's Club in Collinsville, Ill., on March 5, 1909, at 2 p. m., President S. T. Robinson in the chair. Members present: Drs. Kaeser, Hastings, Binney, Harlan, Wadsworth, J. H. Fiegenbaum, Yerkes, Tulley, Smith, Everett, Ferguson, Fisher, Barnsback, Sims, Door, Siegel, Burroughs, Taphorn, Robinson, Harrison, Schmidt, Schroeppel and E. W. Fiegenbaum. Minutes of last meeting read and approved. Board of Censors report that action on the applications of Drs. Emma Howe and Parl P. Howe be postponed on the ground of non-residence. Adopted. The application of Dr. F. W. Larrabee, of Alton, was referred to the Board of Censors. The following resolution was introduced by Dr. Waldo Fisher.

WHEREAS, Certain so-called fraternal organizations have seen fit to use the medical profession as a tool, to induce people to join their societies, by hiring a doctor to furnish medical and surgical services to members and their families for a paltry sum per year; be it

Resolved, That any physician who enters into an agreement to give his services for a stated sum, less than regular fees, to any person, society or fraternity, is not eligible to membership in the Madison County Medical Society.

On motion the resolution adopted.

A letter was received from our state president, Dr. J. E. Pettit, stating his desire to visit our society on March 31st. On motion of Dr. Fisher the secretary was instructed to notify Dr. Pettit that the society would gladly receive him, and the president and secretary were authorized to arrange for a meeting to be held in Edwardsville on date above mentioned. The secretary was instructed to notify the secretaries of medical societies in adjoining counties of above meeting and invite the members of these societies to be present.

Dr. G. H. R. Schroeppel presented a clinical case for examination and the chair appointed as a committee Drs. Taphorn, Ferguson, Everett, Tulley and Harrison. Committee's report: Hyperchlorhydria and probably pyloric ulcer.

The essayist of the day, Dr. R. W. Binney, then read a very comprehensive paper on "Diagnosis Between Duodenal Ulcer and Gallstone Disease," bringing out the very latest differential points on this very obscure subject. The paper caused a very general discussion which was ably led by Dr. J. Morgan Sims, of Collinsville.

Dr. R. W. Binney moved that the invitation of the superintendent of the Lutheran Hospital of Granite City be accepted and that we hold our next meeting on the first Friday in June in Granite City. Carried.

On motion adjourned. E. W. FIEGENBAUM, Secretary.

NEWS OF THE STATE.

PERSONAL.

Dr. and Mrs. Henry S. Gradle, of Chicago, sailed for Italy March 15.

Dr. John B. Legnard, Waukegan, sailed for Europe February 16.

Dr. Overton Brooks, Chicago, has returned from abroad.

Dr. W. L. Downey, of Wenona, Ill., has recently returned from Hot Springs, Ark.

Dr. Henry M. Drury, Altamont, who was adjudged insane, has been committed to the State Hospital, Anna, Ill.

Dr. Rosa Englemann, for nearly fourteen years a medical inspector of the Board of Health of Chicago, has resigned.

Dr. Elmer E. Henderson, of Chicago, has been appointed a member of the consulting staff of Cook County Hospital, vice Dr. Daniel R. Brower, deceased.

Dr. George A. Zeller, superintendent of the Illinois Hospital for the Incurable Insane, South Bartonville, returned recently from a trip of observations and study through Europe.

Dr. Shelley B. Hall has been elected president; Dr. Joseph P. Comegys, vice-president, and Dr. Emily Wright, secretary-treasurer, of the medical staff of St. Anthony's Hospital, Rock Island.

Dr. A. B. Carey, Sr., accompanied by his two sons, Dr. A. B. Carey, Jr., of Pittsfield, and Dr. Ben Carey, of Griggsville, left recently for Rochester, Minn., to undergo a delicate surgical operation.

NEWS.

During the recent examination for internes in the county hospital and the county institutions at Dunning, 120 applicants were present.

Representative Chipperfield reintroduced his bill for the establishment of a surgical institution for the treatment of children under the age of 14 years, a measure introduced by him two years ago.

A special committee, of which Dr. William Cuthbertson is chairman, has been appointed by the Chicago Medical Society to investigate the claim of Dr. Samuel Guthrie as the discoverer of chloroform.

The physicians' staff of St. Anthony's Hospital, Rockford, met for organization February 26 and elected the following officers: President, Dr. W. Grant Hatch; vice-president, Dr. Emil Lofgren, and secretary-treasurer, Dr. George P. Gill.

The Hoopeston city council recently passed an ordinance prohibiting the throwing or distribution of "patent medicine" samples on doorsteps, sidewalks, streets and alleys of the city. Samples may be left at any residence if handed to an adult.

One Charles McCormick, of Chicago, who was charged with criminal libel by reason of a pamphlet containing a scurrilous personal attack on Mayor Busse, which is said to have been circulated, was recently arraigned in the Criminal Court of that city, pleaded guilty and was fined $50 and costs.

If the plan proposed by the State Board of Charities to the present legislature goes into effect and the appropriation of $803,000 sought is granted, three special colonies for epileptics will be established in the state—one at Kankakee, one at Anna, and a third for feeble-minded epileptics at Lincoln.

An institution to be known as the Chicago Fresh-Air Hospital, to be conducted in Cook County without pecuniary benefit, has recently filed papers of incorporation at Springfield. Dr. Albert J. Ochsner and Ethan A. Gray appear as promoters. A tract of twenty acres is to be chosen immediately as a site for the institution.

The following persons were appointed, March 1, by the governor as members of the Commission on Occupational Diseases, and authorized by the General Assembly: Dr. George W. Webster, Chicago; Dr. James A. Egan, Springfield; Hon. David Ross, secretary of the Bureau of Labor Statistics; Hon. Edgar T. Davies, chief factory inspector; Prof. Charles R. Henderson, James Simpson and Drs. Ludvig Hektoen, Alice Hamilton and Arnold C. Klebs, Chicago.

The Cook County Civil Service Commission held an examination, March 9-11, for interneships at Cook County Hospital and the Dunning institutions. The service at Dunning is for one year and includes a compensation of $12.50 per month, with board, lodging, laundry and an additional $150 to be paid at the end of twelve months' continual service. On March 16 examinations were held for an *x*-ray operator and a librarian at Cook County Hospital.

Dr. E. Stillman Bailey, of Chicago, made the startling statement at a recent session of the Southern Homeopathic Medical Association at New Orleans that he discovered a compound to which he gave the name "radio-thor" made from pitchblende found in Colorado and by which locomotor ataxia and similar diseases were quickly cured when it was applied to the backs of the patients. It will be interesting to hear details of the cases that Dr. Bailey has cured by this means.

MEDICAL SOCIETY NOTES.

Dr. J. W. Pettit addressed the Madison County Medical Society March 31.

Dr. Otto T. Freer, of Chicago, addressed the Morgan County Medical Society March 11.

Dr. John Ridlon and Dr. James W. Pettit, president of the Illinois State Medical Society, addressed the Will County Medical Society at Joliet March 9.

At a meeting of the Canton Physicians' Club the following officers were elected for the ensuing year: President, Dr. J. E. Coleman; vice-president, Dr. J. M. Adams; secretary-treasurer, Dr. D. D. Kirby; membership committee, Drs. J. E. Sutton, P. S. Scholes and L. R. Chapin; judiciary committee, Drs. W. T. Zeigler, H. C. Putnam and D. D. Kirby; board of directors, Drs. J. E. Sutton, E. W. Regan, L. R. Chapin, W. T. Zeigler and Martha Richardson.

The following named officers were elected at the last meeting of the Jasper County Medical Society, March 5, 1909: President, Dr. H. A. Eidson; vice-president, Dr. W. E. Franke; secretary-treasurer, Dr. James P. Prestly; board of censors, Drs. S. P. Berns, James F. Davison and E. E. Burton; medicolegal representative, Dr. James P. Prestly; delegate to Illinois State Medical Society, Dr. G. W. McDeed; alternate, Dr. H. A. Edison. The date of meeting has been changed to the first Friday in the months of March, June, September and December, at 1:30 p. m.

The second midyear meeting of the American Academy of Medicine (specializing in medical sociology) was held in the sixth-floor banquet hall, Auditorium, Chicago, March 25, 1909. The meeting constituted a conference with the academic and medical teachers and was open to the public. The program consisted, during the day, of a general discussion on entrance requirement, didactic and laboratory portions of the medical course, the relation of the literary college and the medical college, and the consideration of the elective courses in the medical schools. In the evening the conference discussed the subject of "What Constitutes a Liberal Education in the Twentieth Century?" George E. MacLean, D.D., LL.D., Iowa City, Iowa, president of the State University of Iowa; Thomas McClelland, D.D., Galesburg, Ill., president of Knox College; Charles F. Thwing, D.D., LL.D., Cleveland, Ohio, president of Western Reserve University, were the speakers.

The Physicians' Club of Chicago held a meeting at the Chicago Automobile Club, Thursday evening, March 11. The discussion was on the subjects of "Business Partnerships in the Medical Profession" and "The Question of the Division of Fees." The chairman for the evening was Dr. William T. Belfield and the following subjects and speakers constituted the program: 1. "Advantages and Disadvantages of Office Cooperation and Business Partnerships Among Medical Men," Dr. Casey A. Wood; 2, "The Question of the Division of Fees from the Surgeon's Standpoint," Dr. J. F. Percy, Galesburg, Ill.; 3, "An Equitable Arrangement of Fees from the Physician's Standpoint," Dr. Wm. E. Quine. Discussion opened by Dr. Henry F. Lewis, Dr. Charles L. Mix and Dr. John A. Robison. THE JOURNAL has discussed this subject of fee-splitting in its columns for the past several months and arrangements have been made for the full report of the Physicians' Club meeting, which will be published in our next issue.

The report of the Committee on the Abuse of Medical Charity, Dr. Fischkin, chairman, of the Chicago Medical Society, was made before the Council of that society, March 9. The report is comprehensive and

shows a great amount of investigation work by the committee. It must be of great interest to the general profession of Illinois, and we print that report in full as it appeared in *The Bulletin* of the Chicago Medical Society:

Dr. Fischkin, Chairman:—Your committee, in deliberating upon the course to be taken in finding a solution to the problem of the abuse of medical charities, has agreed upon the following premises:

1.—*Charity Is a Cardinal Virtue of Medicine.*—No matter how heavy the burden of medical charity shall fall upon the medical profession, it is willing to carry the burden, but the medical profession has come to the recognition of evils which have crept into the work of charitable institutions and is bent to remove these evils.

2.—*The Practice of Medicine Is Based Upon the Confidence of the Public.*—Whatever remedies we shall select as best to eradicate these evils, they must find public confidence and approval. Guided by these premises, your committee has tried to disentangle the perplexities which have confronted it in the solution of the abuse of medical charities.

THE PROBLEM.

The task of administering medical charities in institutions is made complex and its right accomplishment difficult because it involves various and more or less conflicting interests; the interests of the suffering poor for whom the institutions are primarily established; the interests of charitable organizations which create and manage these institutions and which are or are supposed to be prompted by the sole desire of giving charitable relief to the needy; the interest of the physicians on the attending staffs of these institutions whose benevolent desires are gratified and whose medical experience is enriched and whose reputation is enhanced by this service; the interests of the medical profession at large which is desirous of having places for the treatment of their poor patients, but whose economic rights may be interfered with by an unjust administration; the interests of medical science whose progress is largely due to observation and study in these institutions; the interests of the medical colleges whose work depends upon their existence, and the interests of the general public which is concerned in a just and adequate administration of public charities.

In the study of this complicated situation your committee has found itself naturally and inevitably taking a broad view of its problem. The administration of medical charities is closely involved with other serious evils besides economic abuse, and these evils ought not to be lost sight of in any effort at improvement. Owing to the close relationship between all of the evils and their evident dependence in a large measure upon the one for the eradication of which the committee was established, the study of the whole problem has served but to emphasize the fundamental necessity of correcting economic abuse. The imposition of economically independent persons upon charities, which are intended for the relief of the suffering poor only, involves not merely the impoverishment of the medical practitioners, who are thus deprived of the possibility of rendering remunerative service, but such imposition effects also a moral injury to these fraudulent recipients of charity themselves, and the moral propriety of institutions either permitting or fostering this evil, even though they may be prompted by the charitable intention of increasing by these means the facilities for treatment of the poor, is open to serious question. However we may approach the problem of reform in charity administration, one proposition must, in justice to all concerned, be given weight over all others, namely, the improvement of efficiency in service. And the particular evil which, by increasing the numbers to be treated and by disturbing the confidence of the physicians in the worthiness of their free patients, contributes more than all else toward the present serious inefficiency in the service, is the economic abuse of the free facilities offered. The eradication of this evil is, therefore, the necessary first step toward the general

uplifting of the administration of medical charities to a higher plane of justice, morality and efficiency, and this should be considered the real problem to be undertaken in this movement.

THE SOLUTION.

The correction of the fundamental evil of the abuse of medical charities the committee considers possible only by placing the relationship between the different interests participating in the adminstration of medical charities on a sound and commonly ethical basis, thus displacing the confusion which is now governing them and which is working so injuriously to the medical profession. The difficulty of the problem lies chiefly, as has been said, in the diversity of the different interests concerned, they being actuated by generally benevolent, but conflicting and often antagonistic conceptions. In order to exclude so far as possible the infringement of one interest upon another, it is necessary to establish a common basal principle of conduct applicable to all, that of administering charity for Charity's sake only.

The commmittee has, therefore, come to the conclusion that the organization of medical charities must rest upon the same principle upon which modern organization of general charity is based, and that is investigation of those to whom charity is administered. It therefore, in the beginning of the fiscal year, had several conferences with the representatives of the organized charities of Chicago, with the object of interesting them in the solution of this most important problem and of placing the solution in their capable hands.

Your committee was prompted to this step by the following considerations:

1. The exercise of charity toward those who best deserve it and the detection of imposters who would be degraded by it is a difficult task which requires a great deal of personal exertion, an expensive investigating force, much time, as well as judgment and tact, not given to all, but which is now developed as a working machinery by the associated organized charities of Chicago.

2. The organized charities of Chicago, representing the moral progress and ethical conscience of the people of this city, are alone in a position to command the respect and to gain the confidence of all parties concerned in the administration of medical charities as well as of the general public.

The representatives of the organized charities have accepted our proposition most sympathetically and have declared themselves ready to take up the new movement, of the reform in medical charities, as their own, with the condition that the entire organized medical profession of Chicago shall stand behind it.

Your committee has, therefore, sought the cooperation of the homeopathic, eclectic and physio-medical societies. At conferences which have repeatedly been carried on between your committee and those organizations and societies, the representatives of the four organizations of charities: (1) The Chicago Bureau of Charities, (2) the Chicago Relief and Aid Society, (3) the Jewish Aid Society of Chicago, and (4) the Children's Relief and Aid Society of Chicago, have declared themselves willing to combine their individual resources into the establishment of a system which would undertake to investigate and pass upon the merits of applicants for medical charity. As a result of this conference the following working plan for inaugurating a system of investigation has been agreed upon.

THE PLAN.

The institution (dispensary or hospital) shall receive each applicant for free medical service as if presenting himself in good faith and worthy of charity. Each patient, upon presentation, shall be asked certain definite questions, alike for all institutions, as follows: Name. Address. Sex. Nationality. Married or single. Widowed or separated. Names of children and their ages. The amount received in wages by each member of the family. Number of rooms occupied and rent paid.

All of this will be recorded on a card with proper blank places and of a size suitable for filing. Moreover, each applicant (and this is an important feature

of the plan) is to be told that his case may be investigated. The patient may remain for the first treatment. These cards, duplicates of which shall be kept in the institution, shall each day be sent by mail to the office of the Bureau of Investigation, to be formed by the above-mentioned charitable organizations. After a brief time, two days or perhaps more, the report from the bureau will come back, including a statement concerning the fitness of each applicant for free service. The institution shall accept this judgment as final, unless upon mutual reconsideration the Investigating Bureau alters its judgment.

The Investigating Bureau, having at its disposal the records of tens of thousands of cases on file by the organizations above mentioned and other charitable organizations that use investigation and registration (the county agent has also promised his cooperation), will compare these records with the information on the card received from the dispensary or hospital and, if necessary, investigate the case at the homes of the patients, after which judgment as to fitness of the applicant for free service will be formed and this information returned to the inquiring institution.

Emergency operations shall be performed at once, if necessary. Operations of election shall not be performed before the bureau has returned its report.

THE APPLICATION OF THE PLAN.

At the outset there necessarily must be much uncertainty as to the size of the task of investigation. While the charity organizations are entirely ready to employ the facilities they possess and are willing to enlarge them in so far as is possible, yet they, in the nature of things, can not promise that their facilities will be sufficient. In other words, they can enter at present into no fixed agreement to handle an indefinite amount of this work. They stand ready merely to do their best with their present facilities. Investigation at the patient's homes would at present be carried on only in selected cases, left to the discretion of the Investigating Bureau. In the busy winter season they might find that the increased demand from their regular work would compel even this partial degree of medical charity service to be slurred over. They estimate, however, that an annual increase in their present resources for this purpose of from six to eight thousand dollars would place this whole matter upon a sound and reliable basis, such that every applicant for medical charity could be adequately investigated. Eventually it is believed this annual sum could be obtained from the public.

It is the belief of the organized charities that the application of this plan of investigation, even in its preliminary, imperfect and limited form, will serve to eliminate a very large percentage of the abuse; the very fact of the applicant being told that his case may be investigated will keep imposters away to a great extent. And eventually, with the enlargement of the machinery of investigation, with the education of the public and the profession and with the organized efforts of physicians administering medical charities, the ideal plan of universal investigation could be put into operation.

Your committee believes that the system of investigation as offered by the organized charities should be first applied to dispensaries. It will be the function of your committee to resume the work of last year's committee toward organizing the free dispensaries into a federation or association with the purpose of accepting the system of investigation of the organized charities.

In regard to hospitals, however, your committee believes that an immediate application of the plan would be unwise and even impossible, inasmuch as the condition of treatment as well as the character of the applicants for free service and their places of residence widely differ from the applicants at the free dispensaries, and while the conditions of free medical treatment in dispensaries have been investigated the exact conditions in hospitals are not as yet understood. Your committee is, therefore, taking steps to start an investigation to that effect and is of the opinion that before this investigation has been concluded no attempt should be made to apply the system to hospitals.

THE ENFORCEMENT OF THE PLAN.

Your committee is aware of the difficulties which will stand in the way of introducing the new method of administration of medical charities. Physicians and lay administrators of charitable institutions may be inclined to hold on to what seems to them a present advantage, and the refusal or lukewarmness of a few institutions is likely to defeat the whole plan, because institutions will hesitate to relinquish an advantage unless all do likewise.

To overcome these difficulties we have at our disposal the following means: (a) Education and appeal, in order to cause physicians and lay administrators to see the advantage and desirability from every standpoint of elevating the standards of medical charity administration. (b) The full moral influence of a united profession brought to bear upon institutional physicians. (c) The exercising of punitive measures available to medical societies, namely, censure, suspension or expulsion from membership.

The wisdom of exciting widespread antagonism by harsh attempts at compulsion is open to question. It is the belief of your committee that the effectiveness of professional rules lies less in a sense of compulsion than in a sense of their innate right and justice and in the formation of a habit of acquiescence in the common purpose. In a matter involving a thousand physicians and as many laymen and a hundred and more institutions, under conditions where conduct is easily concealed, it would seem that loyal enforcement of a plan of investigation must, in the nature of things, depend upon a practically universal individual respect for the system to be enforced; also the full justice of attempting immediate drastic, unitive measures to undo evils, which have, for the most part, been an innocent sociological growth, acquiesced in, if not approved by all, may be questioned, for we can not punish for ethical misconduct, before the ways of ethical conduct are clearly marked out. And yet the value of society action must not be underestimated and must in the long run be exercised. Your committee, therefore, submits the following preamble and resolutions to the Council and recommends their adoption:

RESOLUTIONS.

WHEREAS, Present conditions concerning the administration of medical charities in Chicago are fully known to be intolerably crowded with injustice to the physicians of the city:

WHEREAS, Said conditions seriously tend to encourage fraud and dependence in very many of those who seek the aid of medical charity;

WHEREAS, By overcrowding free-treatment institutions and by destroying the confidence of physicians in the worthiness for free service of their institutional patients, present conditions are largely responsible for the careless and inadequate treatment now to a serious extent prevailing;

WHEREAS, It has become imperative, in order to protect the interests of the public, the sick poor and the physicians, to place the administration of medical charities upon a higher plane of justice and efficiency; therefore, be it

Resolved, By the Council of the Chicago Medical Society, that the plan of cooperating with the Chicago Bureau of Charities, the Chicago Relief and Aid Society and other charity organizations to establish a Bureau of Investigations and a system of inquiry as to the worthiness of the applicants for free medical treatment in dispensaries and hospitals, shall be adopted and that the Committee on Abuse of Medical Charities be authorized to make formal application to the respective boards of these organizations.

Resolved, That the Chicago Medical Society shall cooperate with the Chicago Homeopathic Society, the Chicago Eclectic Society and the Chicago Physio-Medical Society for the purpose of working out the details of the plan of investigation with the Chicago Bureau of Charities and the Chicago Relief and Aid Society, and that the Committee on the Abuse of Medical Charities be authorized to undertake such cooperation.

Resolved, That the Chicago Medical Society shall unite with the Chicago Homeopathic Society, the Chicago Eclectic Society and the Chicago Physio-Med-

ical Society and the Chicago Bureau of Charities and the Chicago Relief and Aid Society in inviting all the reputable free dispensaries of the city to cooperate in the establishment of an adequate system of investigation of applicants for free treatment and to the elevation of the standards of management and treatment of the sick poor in the dispensaries of the city, and that the Committee on the Abuse of Medical Charities be authorized to undertake such cooperation.

Resolved, That the Chicago Medical Society unite with the Chicago Homeopathic Society, the Chicago Eclectic Society, the Chicago Physio-Medical Society and the Chicago Bureau of Charities and the Chicago Relief and Aid Society in the investigation of charity administration in the Chicago hospitals, and to this end, and in union with the above-mentioned organizations, the various hospitals and members of hospital staffs be requested to furnish the needed information.

Resolved, That the following proposition shall be submitted to a referendum vote of the full membership of the Chicago Medical Society at the annual election of officers in June, 1909, each proposition to be voted on separately:

1. The Chicago Medical Society hereby declares, through this general referendum vote, its future fixed purpose concerning institutional medical charity, namely, that every patient treated by members of the Chicago Medical Society in free institutions shall undergo an investigation as to his or her economic right to free service, in accordance with plans for the investigation to be determined upon by the Council of the Chicago Medical Society in conjunction with the other medical societies and the charitable organizations of the city.

2. With the establishment of such a system of investigation it shall be a matter of society ethics for all members of the society serving on the staffs in charitable medical institutions to conform with and to enforce the established system of investigation in their institutions.

3. The raising of money annually needed for the purpose of placing and maintaining the system of investigation upon a firm and reliable foundation by subscription both from the general public, from the members of the society and from the physicians non-members is hereby authorized, and the members of the society pledge themselves individually to a full financial support of this enterprise. It is, however, considered that the burden of the expense ought eventually to be entirely assumed by the general public.

Be it further Resolved, That a committee of three be appointed by the President to superintend the referendum vote provided for in the preceding portion of these resolutions.

Resolved, That the pages of the *Bulletin* be thrown open until the time of the referendum vote to the discussion of the matters to be voted on, subject to the editorship of the Secretary and one additional member of the society appointed by the President.

Resolved, That the *Bulletin* containing this subject be distributed at the expense of the society to physicians of the county not members of the Chicago Medical Society.

Resolved, That at least one meeting of the general society and more than one if the President and Secretary of the society deem it advisable, shall be devoted to this subject between the present time and the date of the referendum election.

Resolved, That the Council request every adjunct and affiliated society to arrange discussions of this subject at one or more regular or special meetings previous to the date of the annual election.

E. H. Ochsner, Bertha Van Hoosen,
S. J. McNeill, Thomas Faith,
J. B. Loring, F. B. Earle,
E. L. Kenyon, J. M. Dodson,
E. A. Fischkin, Chairman.

PUBLIC HEALTH.

Smallpox has been reported at Blend.
Smallpox is reported at Gillespie, Ill.
Scarlet fever is still epidemic in Aurora.
Smallpox has been reported in Austin, Ill.

A smallpox epidemic is reported at Norris, Ill.

Chickenpox has been reported at Bennington, Ill.

Measles has been reported as epidemic at Moline.

Schools have been ordered closed at Sullivan on account of an epidemic of scarlet fever.

The last case of smallpox has been taken out of quarantine at Canton. During the epidemic 52 cases were placed under quarantine.

As a result of the crusade started again in Chicago by the health commissioner and the chief of police against men who spit on sidewalks, in street cars and elevated trains, five violators of the ordinance were each fined $1 and costs February 17.

Health Commissioner of Evans, of Chicago, has ordered placards placed in every house where there is diphtheria, typhoid fever, scarlet fever, or other infectious disease and as many other homes as possible, giving concise and plain hygienic instructions in cases of communicable diseases.

As a result of a conference which took place February 25 between the health commissioner of Chicago and the city council, it is hoped that the appropriation of $636,102 asked for the health department will be saved intact. The health commissioner called attention to the fact that, although the council last year appropriated $835,204 for this purpose, the department had spent only $606,410.

The Illinois commission to inquire into the condition of the blind will report to the legislature the following bills: To prevent ophthalmia neonatorum; to enlarge the State School for the Blind, Jacksonville; to rejuvenate the Illinois Industrial Home for the Blind, Chicago; to care for the aged blind; to create a state commission for the blind, and to appropriate $1,000 for a state census of the blind.

Dr. J. C. Westervelt, of Springfield, a member of the State Board of Health, was in Hardin last week investigating the numerous cases of scarlet fever. He says there are over 70 cases reported, and when the disease first made its appearance it was in a very mild form and people paid no attention to it, but as it gained headway it became more virulent. Many towns have been quarantined against Hardin.

The legislature, on March 10, passed the Glackin bill by a vote of 140 to 2. The bill authorizes cities and villages to levy a special tax of one mill to construct and maintain public tuberculosis sanatoria. The prime object of this bill is to secure for Chicago a sanatorium for tuberculosis, as the mill tax will amount to about $160,000 a year. The question of the issue of bonds will be submitted to voters at the coming election and will undoubtedly meet with approval and result in this good work being undertaken.

CHANGE IN LOCATION.

Dr. C. E. Frogg, of Toluca, has returned to Wenona, Ill.

Dr. J. W. Evans has removed from Toluca to Varna, Ill.

Dr. A. L. Lafferty, of Elmore, has located at La Rose, Ill.

Dr. J. J. Toalson has removed from Peoria to Danville, Ill.

Dr. Benjamin M. Forrest has removed from Peoria to Henry, Ill.

Dr. B. F. Stults has removed from New Holland to Mowequa, Ill.

Dr. Albert W. Bradford has removed from Sparland to Lacon, Ill.

Dr. G. M. Tyrrall has removed from Elizabeth to Scales Mound, Ill.

Dr. J. Wilson Ramsey has removed from Memphis, Tenn., to Aledo, Ill.

Dr. M. L. Huntington has removed from Moline, Ill., to Platteville, Wis.

Dr. T. C. Kimball has removed from Abingdon, Ill., to Carbondale, Kans.

Dr. E. S. Everett has removed from Amboy, Ill., to North Attleboro, Mass.

Dr. W. Purviance has removed from Granite City, Ill., to Panhandle, Texas.

Dr. F. P. Zerfass has removed from Sullivan, Ill., to Oxford, Ohio, Retreat Sanitarium.

Dr. J. C. McEnery has removed from Jacksonville, Ill., to 111 Wabash Avenue, Kansas City, Mo.

Dr. W. E. Scarborough has removed from Shelbyville, Ill., to Medicine Block, St. Paul, Minn.

Dr. O. B. Lamhert has changed his address from 1957 Deming Place to 2358 Indiana Avenue, Chicago.

NEW INCORPORATIONS.

Paul Brothers Medicine Company; location, Belfast, Me.; location in Illinois, Alton; capital, $300,000; capital in Illinois, $300,000.

Bethwill Sanitarium, of Dixon, Ill.; maintain private hospital; incorporators, William A. Herrick, Melissa A. Herrick and Oscar E. Eicholtz.

Dr. Sanders Institute, Chicago; capital, $2,500; to operate a dermatological institute; incorporators, Hyman J. Rosenberg, M. Goltra, A. C. Wellington.

H. Rosenberg Company, Chicago; capital, $2,500; manufacture and sell drugs and medicines; incorporators, Carl P. Friese, Louis Brandes and Samuel Brandes.

Chicago School of Nursing, Chicago; capital, $10,000; to organize and conduct schools; incorporators, Orville J. Perkins, William H. MacCullough and Arthur G. McKinley.

Illinois Aid and Cooperative Company, Chicago; capital, $2,500; operate drug stores and provide physicians' services, etc.; incorporators, Samuel C. Frye, George W. Henderson and Lawrence Knight.

New Medicine Publishing Company, La Grange; capital, $2,000; general publishing business, also manufacturing and dealing in surgical instruments; incorporators, Peter L. Evans, Henry D. Cheney and George C. Holmes.

MARRIAGES.

JOHN ADAM KAPPELMAN, M.D., of Evanston, to Miss Jennie Hanson, of Oak Park, Ill., March 18.

AUGUST SAUTHOFF, M.D., of Madison, Wis., to Dr. Mary Blakelidge, of La Grange, Ill., on Jan. 20, 1909.

ALBERT WILLIAM BRADFORD, M.D., of Sparland, Ill., to Miss Lucy Smith, of La Prairie, Ill., January 31.

DEATHS.

HARRY CLIFFORD SECRIST, M.D. Miami Medical College, Cincinnati, 1881; died in his apartment in Moline, Ill., February 4, aged 58.

SHELDON J. BASSETT (years of practice, Illinois, 1878) died at his home in St. Elmo, Ill., February 5, aged 71.

HUGO SCHAEFFER, M.D. University of Tübingen, Germany, 1865; died suddenly from heart disease at his home in Belleville, Ill., February 22.

HASKEL R. WOOD, M.D. Eclectic Medical Institute, Cincinnati, 1872; died at his home in Galesburg, Ill., February 25, from cerebral hemorrhage, aged 76.

CHARLES D. ABBEY, M.D. College of Physicians and Surgeons, Chicago, 1890; a member of the Illinois State Medical Society; died at his home in Chicago, February 21, from cardiac dropsy, aged 61.

JOSEPH MCD. LAWRENCE, M.D. Missouri Medical College, St. Louis, 1888; of Willard, Ill.; died in St. Mary's Infirmary, Cairo, Ill., March 7, ten days after an operation for the removal of gallstones, aged 51.

IMMON SEEBER LOWELL, M.D. Albany (N. Y.) Medical College, 1871; of Douglas, Ill.; a member of the American Medical Association; died in Galesburg, Ill., Nov. 19, 1908, from prostatic abscess, aged 66.

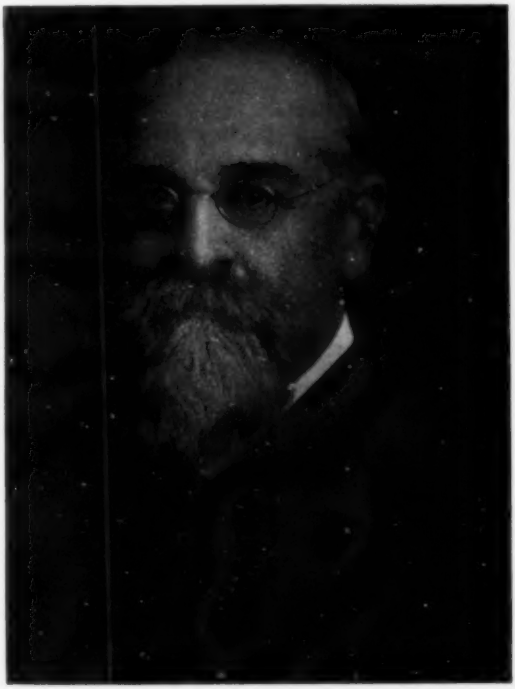
JENNETTE WINDIATE HOLLISTER, wife of Dr. John H. Hollister, aged 81 years and 10 months, died, February 14, at the home of her daughter, Mrs. Franklin H. Martin, 3210 Lake Park Avenue, Chicago.

JOSEPH S. MAXON, M.D. Hahnemann Medical College, Chicago, 1875; Chicago Homeopathic Medical College, 1879; a member of the Wisconsin legislature in 1890 and 1891; coroner of McHenry County, Illinois; died at his home in Harvard, February 28, from influenza, aged 70.

J. H. BROOKS, M.D., a former superintendent of the Northern Insane Hospital, died at Dixon, Ill., recently, of apoplexy, aged 58. Dr. Brooks lectured extensively throughout the country on insanity. While he was in office from 1890 to 1893 the annex to the hospital for incurable insane was built and much was done to improve the living conditions of the patients.

DANIEL R. BROWER, M.D., Georgetown University, Washington, D. C., 1864; dean of the neurologists of Chicago; died at his home in that city, March 1, from cerebral hemorrhage, aged 69. He was born in Philadelphia and graduated from the Philadelphia Polytechnic College

in 1860 with the degree of M.S.; he served in the army as assistant surgeon of volunteers two years during the Civil War, and afterwards as superintendent of the Freedman Hospital, Richmond, Va., and later of the Virginia Eastern State Hospital for the Insane, Williamsburg, for nine years. He came to Illinois in 1875 and settled in Chicago, and soon became an important figure in the medical life of the city. He was for many years connected with Rush Medical College, first as professor of materia medica and therapeutics, and later as professor of nervous and mental diseases, also held for many years the chair of diseases



of the nervous system in the Northwestern University Woman's Medical School and the Chicago Postgraduate Medical College.

He was a member of the American Medical Association, Illinois State Medical Society, Chicago Medical Society, American Neurological Association, American Electro-Therapeutic Association, National Association for the Study of Epilepsy, Mississippi Valley Medical Association and Chicago Physicians' Club, the American Medico-Psychological Association, an honorary member of the Moscow Society of Neurologists and Psychiatrists and one of the founders of the Senn Club, and has been several times a delegate to international medical congresses. He was a member of the attending staff of St. Joseph's, Cook County and

Presbyterian hospitals and consulting physician to the Women's and Children's Hospital and Oakwood Sanitarium. He was the author of a standard text-book on insanity and of many monographs on nervous and mental diseases. He was given the honorary degree of A.M. by the Wabash College and that of LL.D. by Georgetown University, Kenyon College and St. Ignatius College.

He was in apparent good health until a week before his death, when he was seized with hemiplegia, causing paralysis on the left side, but apparently not affecting his mentality. He gradually failed physically, but retained consciousness until a few hours before his death, which occurred at 3:30 a. m. Monday, March 1.

Dr. Brower was one of the most beloved medical men of Chicago. He always had kind words and help for the younger members of the profession, was an able consultant, and, in spite of advancing years, kept thoroughly in touch with the latest ideas in his most complex of specialties. He was a constant worker for the public good, and to his efforts have been due many of the reforms instituted in the care of the dependent insane charges of the state. One of the last public services he performed was as a member of the non-partisan committee appointed to investigate conditions in the penal and charitable institutions in the state.

Book Notices.

A Text-Book of Materia Medica, Pharmacology and Therapeutics. By George F. Butler, M.D., Professor and Head of the Department of Therapeutics and Professor of Preventive and Clinical Medicine, Chicago College of Medicine and Surgery, Medical Department of Valparaiso University. Sixth Edition, Revised and Enlarged. Octavo of 708 Pages. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $4.00 net; Half Morocco, $5.50 net.

That ten revisions or reprints of Dr. Butler's work on Materia Medica have been called for in the past twelve years is the best possible evidence of the popularity of this book and proof that it fills a want of the student and practitioner of medicine. The present edition has been thoroughly revised, enlarged and adapted to the 1905 revision of the United States Pharmacopeia. Dr. Butler might be charged with being a therapeutic enthusiast, but on the whole a therapeutic enthusiast is more to be admired than a therapeutic annihilist.

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, M.D., Professor of Medical Chemistry and Toxicology, Philadelphia. Second Revised Edition, Octavo of 655 Pages, Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00 net.

Dr. Holland's Medical Chemistry and Toxicology is exactly what it purports to be—a text-book showing the remarkable developments of physical science in recent years which have furnished the practical sciences with working principles of great value, which are being applied successfully to biologic problems in bacteriology and pharmacodynamics. Cryoscopy, osmotic pressure, electrolytic dissociation, mass-action, radioactivity, have not been recognized hitherto as part of the preparatory studies, and hence should find a place in the medical text-book to the extent at least of a compendious statement of the principles involved. All that has been included within the scope of this work is little more than a foundation for those who choose to build upon it hereafter. This must be a growing class, for there is great hope of medical progress in this direction.